AIR CONDITIONING HEATING & REFRIGERATION NEWS
The Newspaper of the Industry
RESIDENTIAL — COMMERCIAL — INDUSTRIAL
April 6, 1959
Issued every Monday at 450 West Fort St., Detroit 26, Michigan
Established 1926
Member, Associated Business Publications ABP ABC Member, Audit Bureau of Circulations

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Subscription Price, $6 Per Year (U. S. and Canada). Foreign: $10.00 Per Year.

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Australia Fore!
Ingenious Serviceman Rockets Into Jail
Trade Papers
Human Small Business Story

Stories of the Week

Neighborhood grocery store proudly advertised:

"Imported Groceries."

Across the street a Greek immigrant competitor countered with the happy slogan:

"Imported Grocer."

"Yass," said a panhandler, "I useter be well off. Managed a laundry, I did."

"What happened?"

"She upped and left me."

Australia Fore!

Pope Products, Ltd., Borg-Warner's Australian licensee, has moved into a remodeled 70,000 sq. ft. Sydney headquarters building.

The new building now houses the company's sales and administrative office. It is one of the two buildings on a nine-acre site, recently taken over by Pope Products.

In announcing the move, the managing director, S. Barton Pope, said the company's investment soon would exceed 1,000,000 pounds.

"In the mushrooming Australian market, companies like ours are hard-pressed to expand fast enough to handle their business," he added.

Ingenious Serviceman Rockets Into Jail

Refrigeration serviceman Ernest Denmon, Jr. of Detroit recently landed in the news—and in jail.

Seems that a multi-stage rocket with which he was experimenting blew up—rocking the neighborhood, and bringing the cops.

Police took five rockets and a rocket launching device from Denmon's home. The rockets were made with finesse from old pieces of copper refrigerator tubing, flash light casings, and other scraps.

Denmon claims he has developed a propellant that makes lightweight copper a practical substitute for steel in rocket shells. If allowed to develop it further he believes he can make a small rocket practical for use by infantry troops, who could

(Concluded on Page 11, Col. 1)

Perfection Takes Gibson's Central Residential Line

CLEVELAND—Central residential air conditioning activities of Gibson Refrigerator Co. will be consolidated in the operations of Perfection Industries, which has its plant and headquarters here.

Both companies are divisions of Hupp Corp. The announcement was made here by A. J. De Fino, Hupp vice president.

"Transfer of these operations conducted by Gibson in Greenville, Mich. into the well-established and larger volume central air conditioning and heat pump program conducted by Perfection will allow Gibson to concentrate on room air conditioners and room-type heat pumps," De Fino stated in his announcement.

(Concluded on Page 4, Col. 1)

Westinghouse Puts 2 In Product Posts

STAUNTON, Va.—Important marketing responsibilities in Westinghouse Electric Corp.'s air conditioninig division have been realigned, it was announced by Donald R. Meckstroth, manager of marketing. Named to positions of broader responsibility are J. A. Cerny and R. L. Sherrill, Jr.

Cerny, in his new position as product sales manager for the complete residential air conditioning and heating line, will be responsible for integrating the division's sales policies and programs on residential cooling and heating. Formerly, he was product sales manager for furnaces.

Sherrill, as the new product sales manager in charge of the commercial air conditioning line including both packaged and applied equipment, will be responsible for the integration of all marketing activities for both commercial and industrial air conditioning equipment. He was formerly product sales

(Concluded on Page 4, Col. 5)

Aseptic-Air System for Hospitals Developed

LOS ANGELES—Installation of what is termed a "revolutionary" aseptic-air system, functioning in conjunction with air conditioning systems, which will eliminate all air-borne bacteria, is proceeding at the surgeries of Mt. Sinai hospital's Beverly Blvd. facilities here.

Terming the installation of this system a major step forward in preventive medicine practices, Lester Finkelstein, Mt. Sinai hospital president, has stated that . . .

"This new aseptic-air system will eliminate all air-borne bac-

(Concluded on Back Page, Col. 1)

Court Holds All 'Household-Type' Air Conditioners Subject to Tax

* * *

Industry In Confusion Over Proper Procedure; Fedders Halts Shipments of All Room Units

DETROIT, April 2—The air conditioning industry, as of this date, is in a state of complete and utter confusion as to what course of action it should take with respect to the Federal excise tax on room air conditioners, following the decision by the U.S. Seventh Circuit Court of Appeals stating that the tax should be imposed on all "household-type" air conditioners.

At least one manufacturer (Fedders) has stopped shipments of air conditioners, awaiting clarification of the court's ruling, and others may do likewise.

The immediate problem, so far as the manufacturers are concerned, is simply this: if they ship units without collecting the tax, and it is later determined that such units should have been subject to tax as of the date of shipment, the problems of collecting the tax might be stupendous.

An official of the Internal Revenue Service told the NEWS today that "we have formulated no course of action at this time." He said that the IRS would undoubtedly be called upon to issue some sort of ruling in accordance with the court's decision. He also said that IRS officials would "very likely" meet with air conditioning industry representatives in the near future.

Questioned as to whether there was any precedence for a court decision whereupon a Federal court had voided an IRS administrative ruling so completely the official noted "not within my memory—at least, not with respect to a classification ruling."

Asked whether or not the tax might be levied retroactive to the date of the court's decision

(Concluded on Page 33, Col. 3)

Bill To Tax Coolers Is Texas Proposal

AUSTIN, Texas—A bill has been introduced in the Texas legislative assembly which proposes a 5% tax on air conditioners at the wholesale level.

The definition of "air conditioner" in the proposed tax measure is quite broad, apparently stating that it is to include "any apparatus or device commonly known as an air conditioner" and also "any mechanical devices assembled to provide cooling." The tax would also be levied on any such air conditioner brought into the state by a resident.

The bill, designated as HB 879, was introduced by Rep. Hinson.

'Discomfort Index' Plans Outlined by U.S. Weather Bureau

WASHINGTON, D. C.—Many U. S. weather stations are preparing to calculate and announce the "discomfort index" on an experimental basis this summer.

Human discomfort results from the combined effect of temperature and relative humidity, the Weather Bureau noted.

Index figures will enable managers of office buildings, hotels, and movie houses to judge when they should turn on their air

(Concluded on Page 4, Col. 3)

CHICAGO — All "household-type" air conditioners that provide mechanically refrigerated cooling are subject to the 10% Federal excise tax, regardless of output capacity, it has been ruled by the U. S. Seventh Circuit Court of Appeals here.

The principal finding in the decision written by Circuit Judge Schnackenberg for the three-member court and handed down March 20 is the following:

"An air conditioner is of the household-type when it is made to meet the needs of a household. If a housewife enters a store of an air conditioner dealer and expresses a desire to buy an air conditioner for her home, she will be furnished with an air conditioner of the household type, i.e. one adapted to the home space which she seeks to air condition. Such an air conditioner is the type mentioned in subparagraph (c) of the sections of the code now under discussion. Those were the air conditioners upon which Congress laid the 10% tax.

"Neither the rated, nor actual, motor horsepower of such air conditioners is of any moment here. That these air conditioners might be used for other than household purposes is immaterial. The rulings of the Commissioner, insofar as they are not in conformity with these views, are void."

In its decision the Appeals Court also asserted that the interpretation of the Federal tax law is a proper judicial function, and that when the opinions of the judiciary and such administrative agencies as the Internal Revenue Service are in conflict, the opinion of the judiciary

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BEHIND PAGE ONE . . .

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Carrier Has One-Piece Heat Pump for Homes

SYRACUSE, N. Y.—Development of a new, "low-cost" residential heat pump is reported by Carrier Corp.

The compact one-piece unit will provide complete winter and summer air conditioning for smaller homes and multi-unit dwellings, it was stated.

Russell Gray, Carrier vice president and general manager of the Unitary Equipment Div., said the new heating-cooling unit not only will cost less than $1,000 installed, but will match in price many conventional systems that provide heating alone.

He claimed that it will represent substantial savings in oper-

(Concluded on Back Page, Col. 3)

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Reentered as second class matter October 3, 1936, at the post office at Detroit, Mich., under the Act of March 3, 1879.

Work Resumed In Clearwater

Outside Engineer Decides City Selected Best Bid on Library Air Conditioning

CLEARWATER, Fla. — The low bidder on an air conditioning project for the Clearwater library lost the second and final round to the high bidder.

The city commission instructed the high bidder to resume work, which was interrupted for one week while an outside engineer evaluated bids and specifications.

Counsel for the low bidder complained at a previous meeting of the city commission that the high bid was not the best bid and should not have been accepted. He pointed out that his client's bid was $1,068 lower.

The attorney asked the commission to either call for new bids or invite an outside engineer to determine if the city engineer chose the best bid.

"It is my opinion the city engineer selected the best of the two proposals," Carl Hickman of Florida Power Co. appraised.

Hickman told the commission he inspected the library, drew up his own specifications for the project, then compared the two bids with his own findings.

The attorney said his client would abide by Hickman's recommendations. Earlier, the attorney said the ductwork included in the high bid was not necessary.

Hickman, however, was quoted as saying the ductwork would provide better air distribution and was worth the extra cost.

MCAA Secretary Resigns To Take Post In N. Y.

NEW YORK CITY—Lloyd B. Gruman, Jr., secretary of the Mechanical Contractors Association of America, Inc., announced that he was resigning to accept the position of secretary of the Mechanical Contractors Association of New York.

Robert B. Miller, who has been secretary of the Mechanical Contractors Association of New York since 1930, has announced his intention of retiring July 1, 1959.

"Challenges to be met in the New York City position offer a great opportunity for me," Gruman said at the time of the announcement. "Moving from the national office to the New York City association is only a change of focus for my efforts."

ARI Show Committee Adds 3 Members; Conference-Type Meetings Being Studied

WASHINGTON, D. C. — Enlargement of the ARI Show Committee by the appointment of three additional members to meet with the committee to consider a program of conference-type meetings in connection with the 11th Exposition of ARI at Atlantic City in November has been announced by Don V. Petrone, institute president.

On the agenda for the group's first meeting will be consideration of types of sessions to be held, times, speakers, and all other details of the conferences.

The meetings will be designed to interest various segments of the industry and its customers—architects, consulting engineers, government specifiers, manufacturers of end products who are customers for the parts and components to be displayed, and others.

The new members are Paul M. Augenstein, president of Airtemp Div., Chrysler Corp.; M. M. Lawler, vice president, Worthington Corp., and former president of ARI; and R. K. Serfass, vice president, Westinghouse Electric Corp.

In its planning for the proposed conferences, decided upon at a recent meeting of the ARI board of directors, the committee will consider whether the meetings shall emphasize marketing, technical matters, applications, or a combination of these. Details of the conferences will be announced following a meeting of the group.

Meanwhile, George E. Mills, ARI Show Director, announced that 140 exhibitors already have signed for space in the industry show, scheduled Nov. 2-5 in Atlantic City's Convention Hall. He said these exhibitors account for over 60% of total available space, seven months before the opening of the show.

A MILLION water valves

...and, not one single report of chatter or water hammer. That is the amazing record that has made the Penn Series 246 water valve the **standard** of the industry.

In addition, there's no corrosion of sliding parts because water ***never touches them*** ... manual flushing is easier ... and, the Series 246 has just the right response rate to maintain closest control of head pressures.

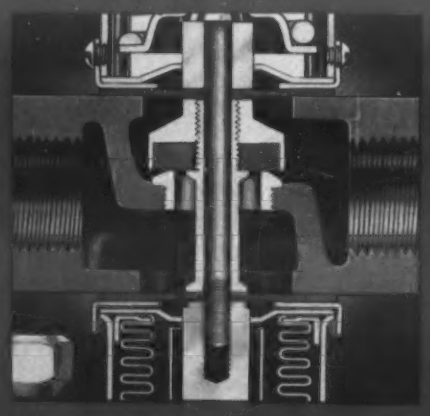
These are the reasons why ***more*** manufacturers and installers buy Penn than any other water valve and why we say ... the Series 246 is your best buy!

Ask your wholesaler for Penn ... it's the refrigeration industry's favorite water valve.

Try Penn on your next job!

Wide range of sizes and capacities available. All-Range model, suitable for both R-12 and R-22, available in ⅜", ½" and ¾" sizes.

No rust, corrosion and sedimentation. Exclusive design keeps water away from bellows, range spring and sliding parts.



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AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

J. A. CAMERON, JR.

LEON T. MART

Marley Elects Leon T. Mart, J.A. Cameron, Jr.

KANSAS CITY, Mo. — The Marley Co. has announced the election of Leon T. Mart as chairman of the board of directors and J. A. Cameron, Jr. as president to succeed Mart.

Also announced was the advancement of M. A. Patton, head of research and development, to vice president in charge of these operations.

Mart founded the company and has been president during the 37 years of its operation. In that time Marley has grown from a small-scale sales group to a manufacturing organization with world-wide operations.

For the past six years Cameron has been executive vice president. Prior to that he was vice president and eastern district sales director. Cameron has been with Marley for 22 years.

In his 12 years with the company Patton has had a number of administrative posts in engineering phases of the business.

Get your copy

Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzalez—25¢ each.

Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

CHRYSLER AIRTEMP ST. PATRICK'S DAY SELL-A-THON

$3,587,000 worth of Chrysler Air Conditioning ordered in a single day!

Distributors show faith in their future with Chrysler by tripling the quota during St. Patrick's Day SELL-A-THON

J. B. Ogden, Vice-President—Sales, tells the story:

"St. Patrick's Day had all the appearance of a 3-ring circus at the Chrysler plant in Dayton—even to midget leprechauns running orders to the order desk. Twenty special long-distance telephone lines were set up for direct contact with Chrysler Distributors in all parts of the country. The phones were manned by Chrysler District Managers.

"They were shooting for $1,000,000 extra in firm orders. They sold $3,587,000! And that's on top of the fact that Chrysler orders to date for air conditioning equipment have been well ahead of last year!

"The staggering success of the St. Patrick's Day Sell-A-Thon is more proof of our distributors' faith in their future with Chrysler. They know Chrysler means business—big business—in 1959, and for all the years ahead.

"You don't need the 'Luck of the Irish' or a four-leaf clover to make money in the air conditioning business. All you need is a Chrysler franchise, and the determination to operate at a profit. There's still room for aggressive, merchandising-minded dealers at Chrysler. If you are one, it will pay to contact your local Chrysler Distributor . . . today." Airtemp Div., Chrysler Corp., Dayton 1, Ohio.

CHRYSLER AIRTEMP

means business—big business—for you in 1959

Perfection--

(Concluded from Page 1, Col. 2)

Gibson has specialized for many years in these plug-in type appliances which are marketed nationally through independent Gibson appliance distributors and dealers, it was further noted.

"This consolidation is one stage in a greatly-expanded marketing program for central residential heat pumps and air conditioners," De Fino pointed out.

To manage these activities at Perfection, De Fino appointed Milo Chavez as manager of the central heat pump and air conditioning department, reporting to Carl W. Millsom, Perfection vice president in charge of air conditioning, furnace, and appliance sales.

Chavez held a similar position with Gibson.

Pennsalt Chemicals 1958 Net Up 20% Higher Than 1957

PHILADELPHIA—In its annual report to stockholders, Pennsalt Chemicals Corp. reported net earnings 20% higher in 1958 than for the previous year.

Total sales of $78,557,000 were $1,250,000 under 1957, a decrease reflecting the company's disposal of the I. P. Thomas (Fertilizer) Div. in March of 1958. On a comparison of total sales for all divisions exclusive of the fertilizer division, the 1958 volume was approximately 1.8% higher than 1957.

Net earnings for the year were $3,676,000, compared with $3,067,000 for 1957, or $2.86 per share, up 46 cents from the previous year.

'Discomfort Index' Plans Outlined--

(Concluded from Page 1, Col. 4)

conditioning machinery, it was pointed out. They will also enable utilities to judge the power load for air conditioning that their customers will require.

Everybody, of course, has a different "boiling point," it was further noted. One man feels cool when another man has to loosen his collar.

The discomfort index, as worked out by climatologists of the Weather Bureau, U. S. Dept. of Commerce, is four-tenths of the sum of the dry and wet bulb thermometer readings, plus 15.

"It is possible to illustrate the index by combinations of temperature and relative humidity," the announcement said. "The discomfort index reaches 75 (which many people find oppressive) when the temperature is 75° F. and the relative humidity is 100%; or when the temperature is 80° and the relative humidity is 60%; or when the temperature is 85° and the relative humidity 30%."

Earl C. Thom, the climatologist who has done most of the development work on the discomfort index (and invented the term), estimates that in the summer about 10% of the population will be uncomfortable even before the index reaches 70; when it passes 75, more than half will be uncomfortable, and at 79 everybody will be uncomfortable, many feeling acutely miserable.

As the index rises above 80, the degree of discomfort increases rapidly, he says. When the index reaches 86 in office buildings of the Washington area, present government regulations permit supervisors to dismiss their employes.

In the fall, winter, and spring, when people have become accustomers to lower temperatures, they are more sensitive to heat. Thom says that during these seasons some 10% will be uncomfortable when the index is only a little above 66, and that in winter nearly everybody will find 74 unpleasant.

The Weather Bureau has furnished information to its offices throughout the country so that they may compute and make public the discomfort index this summer "if their other work permits and if there is a demand for the information."

Climatologists hope that the discomfort index will form the basis eventually for a system of cooling degree-days comparable to the heating degree-days now published daily.

"A heating degree-day is the number of degrees the mean temperature falls below 65," it was pointed out. "An oil distributor calculates the number of degree-days that have accumulated since a customer's tank was last filled, in order to decide when to send the truck again.

"Similarly the cooling degree-day system (perhaps based on a daily average discomfort index of 60) may provide statistics by which the air conditioning and power industries can calculate the needs for various areas at given seasons."

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the complete quality line of refrigeration and air conditioning equipment

LOW TEMPERATURE HUMI-TEMP UNITS — HOT GAS OR ELECTRIC AUTOMATIC DEFROST
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R. L. Sherrill, Jr.

J. A. Cerny

Westinghouse--

(Concluded from Page 1, Col. 2)

manager in charge of applied equipment.

"The product sales manager functions," said Meckstroth, "are now directly aligned with market needs. This reorganization will significantly strengthen product planning, and the coordination of marketing plans for the different requirements of the commercial and residential markets."

Meckstroth also announced that R. D. Hartsig has been appointed Pacific Coast zone manager in charge of air conditioning and heating sales for the company's air conditioning division.

Hartsig will supervise sales of Westinghouse air conditioning and heating products in eight states — California, Arizona, Nevada, Utah, Oregon, Idaho, Montana, and Washington.

R. D. Hartsig

He succeeds William L. Constance, whose appointment as manager of the Los Angeles (Vernon) district, Westinghouse appliance sales, was announced recently.

Hartsig came to his new post from the air conditioning plant in Staunton where he was sales manager of packaged products.

December Compressor Shipments 20% Above '57 But Year's Total Is Down

WASHINGTON, D. C. — Manufacturers' shipments of compressor bodies wound up the calendar year 1958 about 10% below comparable shipments in 1957, it was reported by the Small Compressor Section of the Air-Conditioning & Refrigeration Institute.

December 1958 shipments, however, were about 20% ahead of December the previous year, continuing a steady upswing which began in August. Shipments during the early months of 1958 ran consistently behind comparable 1957 months.

Actual shipments for 1958 totaled 3,559,057 bodies, compared with 3,962,142 in 1957. December shipments were 278,283 units, against 223,456 in December 1957.

While the decrease from 1957 to 1958 was shared by most sizes of compressors, gains were shown for the latter year in 2 and 3-hp. sizes.

The figures, which cover bodies for compressors used in all air conditioning and refrigeration equipment except household refrigerators, were compiled from reports to ARI by manufacturers whose output is estimated to be in excess of 95% of the industry, the section said.

Shipment figures for the various size categories, and names of reporting companies appear in accompanying table.

* * *

MANUFACTURERS' SHIPMENTS OF COMPRESSOR BODIES PRODUCED BY REPORTING COMPANIES

(Except for household refrigerators)

*Horsepower	Shipments Including Exports Dec., 1958	†Jan.-Dec., 1958	Jan.-Dec., 1957
½ & under	109,715	1,199,364	406,866
¼			770,043
⅓	19,270	225,894	237,124
½	6,750	181,522	101,915
¾	3,556	69,565	364,618
1	45,844	689,754	890,710
1½	8,226	238,560	248,427
2	17,461	274,582	225,749
3	6,585	103,914	99,052
5	5,187	68,701	71,628
7½	2,258	33,762	43,145
10	578	10,013	10,070
15	337	4,578	3,700
20	147	1,969	2,255
25	158	1,992	1,915
30	113	2,026	
40	163	2,053	
50	133	1,430	‡7,231
60	72	1,043	
75	65	699	
100 & over	41	461	
Total	**226,659**	**3,111,382**	**3,484,448**
For Auto a-c— Total	51,519	445,487	476,176
For Ammonia— Total	105	1,688	1,518
Grand Total	**278,283**	**3,559,057**	**3,962,142**

*For all refrigerant **except** ammonia (excluding units for automotive air conditioning).

†Includes revised data reported to ARI.

‡Breakdown of 30 hp. and over not available for 1957.

NOTE: In order to avoid disclosing the figures of individual companies, data for two or more sizes of some units are combined on ARI summaries.

Reporting comanies: Airtemp Div., Chrysler Corp.; Bendix-Westinghouse Automotive Airbrake Co.; Brunner Div., The, Dunham-Bush, Inc.; Carrier Corp.; Copeland Refrigeration Corp.; Curtis Mfg. Co., Refrigeration Div.; Frick Co.; Frigidaire Div., General Motors Corp.; General Electric Co.; Kelvinator Div., American Motors Corp.; Lehigh, Inc.; Tecumseh Products Co.; Trane Co., The; Vilter Mfg. Co.; Westinghouse Electric Corp.; Worthington Corp.; York Div., Borg-Warner Corp.

This summary includes all compressor bodies shipped by the reporting companies **regardless** of whether they were shipped separately or incorporated into a condensing unit or unitary end-use product (such as a room air conditioner, display case, freezer, or commercial refrigerator). Shipments for export are included. Shipments for household refrigerators are **not** included.

In order to avoid duplication of reporting, shipment figures were requested from companies that assembled the machined compressor casting with the components necessary to make a complete compressor or motor-compressor assembly.

Thinking of —

- **changing territories**
- **expanding your territory**
- **taking on new lines—**

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CLASSIFIED ADS

Your opportunity may be there.

Shearer Succeeds Withington at Bohn; New Office Opened

DETROIT — Jim Withington, who for many years has been district sales manager of the Cleveland office of Bohn Aluminum & Brass Corp., is planning to retire on April 1.

R. C. Aylward, vice president of sales for Bohn, has announced that Withington's responsibilities will be assumed by C. C. Shearer. Shearer goes to Cleveland from Detroit where he was production manager of one of Bohn's plants.

Aylward also announced the opening of a new Grand Rapids district sales office with Lawrence K. Moore named as district manager. Active in industrial sales for the past 35 years, Moore has represented Bohn as a sales engineer since 1949.

Stewart-Warner Contest To Have Nassau Tours For Dealer Awards

LEBANON, Ind.—All-expense tours to Nassau will be awarded to Stewart-Warner dealers in an air conditioning sales contest now under way.

Dealers will be able to win complete all-expense tours from their home-town airport to Nassau via Miami and return, Walter Blake, Stewart-Warner heating and air conditioning sales manager, said. They will spend five nights and six days in Nassau. A planned entertainment program has been arranged for the dealers and their wives, according to the firm's announcement.

Dealers will qualify for trips by achieving their sales quotas on Stewart-Warner residential and commercial air conditioning units during the period from Jan. 1 to Aug. 31, it was noted.

Stewart-Warner systems are available in 2 to 7½-hp. capacities, both capillary tube and thermal expansion types, both equipped with remote condensing units.

All presently franchised Stewart-Warner dealers, and dealers signed up during the contest period, are eligible for the prize trips, Blake went on to say.

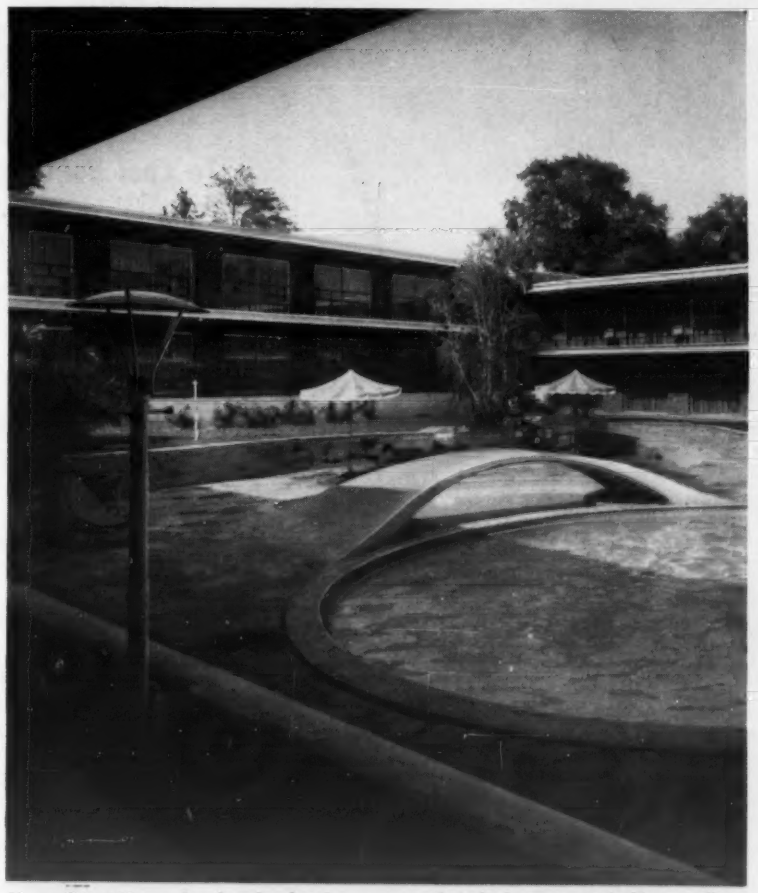
Look, Ma, No Motor

EL PASO, Texas — Thieves who stole an air conditioning unit from a home here were due for a surprise if they tried to use it.

The motor had been taken out for repairs.

The roof-type unit was removed from the house and left in the backyard while being rebuilt.

In super-motels, "super 8's" and supermarkets...



Air-conditioned luxury is only a few feet from your car in today's super-motels. For travellers, air-conditioned super-motels like the one shown above are a home away from home—combining convenience, comfort, often such added attractions as air-conditioned lounges, playrooms and restaurants. Motels *without* air-conditioning just can't compete.

The men enjoy smoking cigars and, with air-conditioning in the car, the whole family enjoys the trip—with the windows up! Americans spent about $150,000,000 on automobile cooling equipment in 1958.

Shopping convenience and comfort—in one of the thousands of bright new air-conditioned supermarkets that make shopping so pleasant. Smart store operators know that air-conditioning increases sales volume.

You'll find

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SUPER-DRY REFRIGERANTS

Approved!
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"Genetron" super-dry refrigerants are universally accepted for use as original or replacement charge in America's finest refrigeration and air-conditioning equipment. Leading manufacturers approve and endorse them. Refrigeration engineers specify them. Wholesalers recommend them. Servicemen and contractors know they can depend on them. That's because "Genetrons" offer unexcelled quality and dryness . . . and their strict specifications are consistently *bettered* in production.

"Genetrons" are available from wholesalers everywhere, coast to coast. See your wholesaler! Insist on "Genetron"!

genetron 11 ORANGE LABEL CCl_3F
TRICHLOROMONOFLUOROMETHANE

genetron 12 WHITE LABEL CCl_2F_2
DICHLORODIFLUOROMETHANE

genetron 22 GREEN LABEL $CHClF_2$
MONOCHLORODIFLUOROMETHANE

genetron 113 PURPLE LABEL $C_2Cl_3F_3$
TRICHLOROTRIFLUOROETHANE

genetron 114a BLUE LABEL $C_2Cl_2F_4$
DICHLOROTETRAFLUOROETHANE

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Joint Committee Offers Recommendations for Developing 'Ideal Trade Association' Out of Merged MCAA and NAPC

NEW YORK CITY — Recommendations for developing an "ideal trade association" out of a merged Mechanical Contractors Association of America, Inc. and National Association of Plumbing Contractors were offered by a joint committee representing the two associations in its final report.

The report was published last month (see page 1, March 23 issue) after the committee reached an impasse over the basic organizational structure of a combined association.

These are the recommendations offered to the two groups for discussion at their forthcoming conventions (MCAA in Washington, D. C. April 29 to May 1 and NAPC in Miami Beach June 1-4):

That a list of five or six areas in which the merged association is to function be drawn up and that it be determined as a matter of policy, the detail in which the objectives are to be stated.

The prime requisite in industry definition should be that the ideal trade association should be a contractor association primarily in the plumbing and/or heating and piping and/or air conditioning field.

That a close liaison be established with the Canadian organization.

That a majority of the board of directors be considered a quorum.

That mail balloting was acceptable form of voting.

That the ideal trade association have a minimum graduated scale of dues which would also include a maximum figure.

That the ideal trade association hold an annual convention with delegates participating in the deliberations of the annual convention; and that the subject of exhibitions be given further study.

That an association managers' and secretaries' conference is necessary.

That a constitution is not necessary. A certificate of incorporation and by-laws are sufficient.

That the ideal trade association be incorporated in the District of Columbia.

That the initial board of directors of the merged association shall consist of 36 members composed of the president, vice president, treasurer, and directors of MCAA; and president, first vice president, second vice president, and directors of NAPC as constituted at the time of the merger.

It was agreed that the ultimate board of directors shall consist of 24 members including officers.

That officers of the merged association be a president, first vice president, second vice president, and treasurer.

That the initial board of directors be reduced by six members a year for two years until the ultimate total of 24 is reached. Then 12 directors would be elected each year to serve a two-year term.

A dues sub-committee calculated that total operating costs for both associations for this fiscal year would be $407,000—$267,000 for NAPC and $140,000 for MCAA. That would be about $42.50 per member.

By deducting obvious duplications, the subcommittee estimated that a merged association could operate on $382,650, or $40 per member. It asserted that elimination of other duplications would further reduce costs.

To Cool Building

PORTLAND, Ore.—A three-story office building to be erected on SW Salmon St. for Oregon Pulp & Paper Co. and affiliates will be air conditioned and have a central steam heating system.

How Students Evaluate Texas Short Course

ARLINGTON, Texas — Reactions of the 62 "students" who attended the recent short course in summer-winter air conditioning held at Arlington State college here may offer some interesting food for thought.

Questioned as to what phase of the course proved most helpful, 25 mentioned "controls," 19 mentioned "design heat loss and gain," and eight cited "trouble shooting."

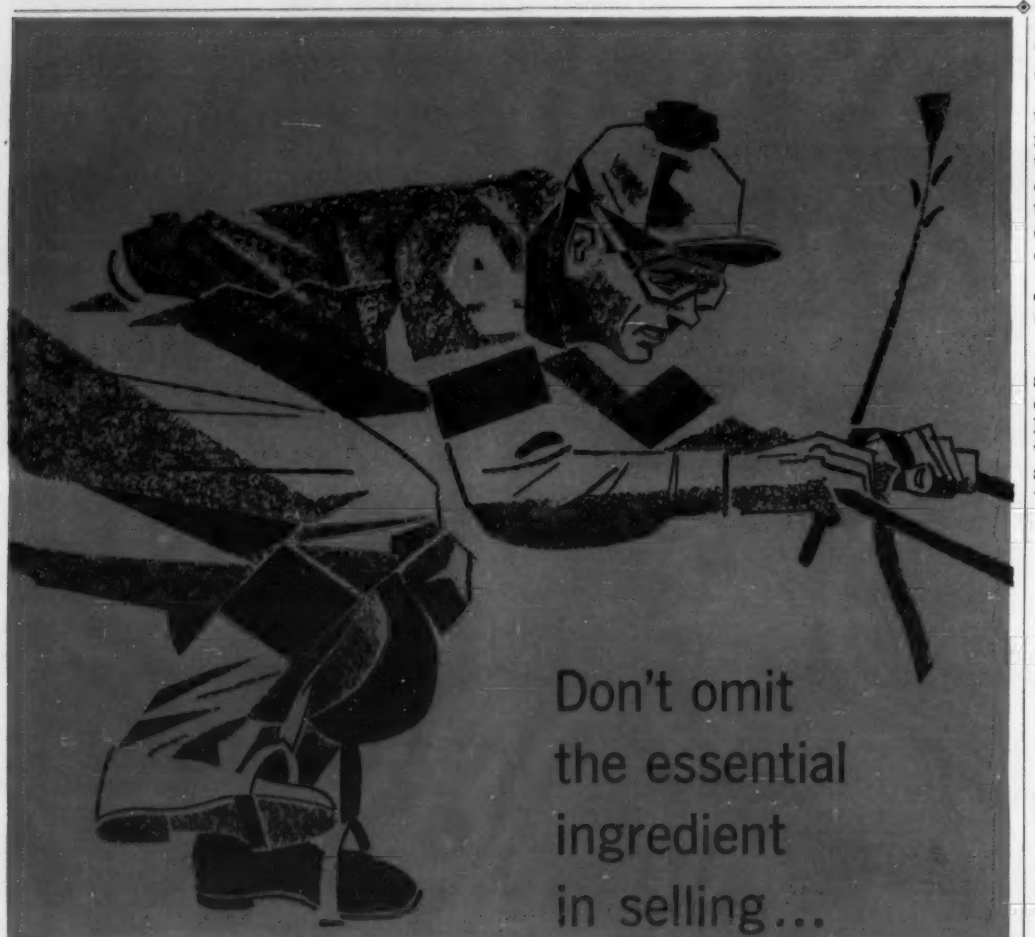
Seventeen indicated additional time should be spent on heat loss and gain, 11 want more time on blowers, and 11 want more time on air conditioning only.

Additional items were listed by a few people on both the above questions, and there were some quite scattered opinions on what phases of the course were weakest.

An annual course was favored 47 to 1; 45 favored more advanced courses, while 37 rated this course as "good," 13 as "fair."

The "students" included 11 servicemen, 10 in wholesale sales, five salesmen, four engineers, four sales engineers, four sales-servicemen, four utility representatives, three foremen, a purchasing agent, installation and service supervisor, a plant engineer, and a maintenance man.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.



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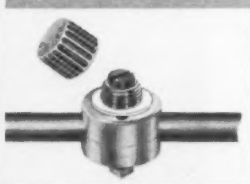
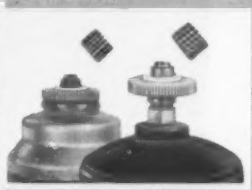


LINE TAP VALVE

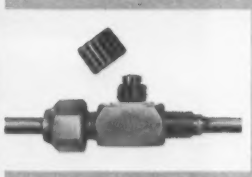
U.S. PAT. NO. 2,827,913

A small compact valve that is easily attached on refrigerant lines and pierces the tubing to provide a permanent port for charging, discharging and testing, without refrigerant loss. Available for 6 O.D. tube sizes: 3/16", 1/4" 5/16" 3/8" 1/2" 5/8" All sizes the same price.



CAN TAP VALVE

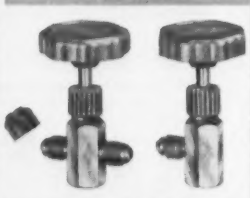
Screws on to most all packaged refrigerant containers and pierces can seal to release refrigerant. Exclusive 3 point sealing allows you to use as much refrigerant as is required with confidence that the balance will not leak from the can. Easily shut off and sealed. Needle is replaceable.



LINE PORT VALVE

U.S. PAT. NO. 2,824,756

Provides a service port for sealed units when it is desirable to cut the line that is to be tapped. Incorporates T-S connection which permits a variety of installations whereby one end may be flared, the other soldered or both ends either flared or soldered.



CONTROL VALVE

Part CV-1 — A lifetime tool designed to operate all Line Tap, Can Tap and Line Port Valves. Quick coupled — installed without wrenches. CV-2 Control Valve is used in same manner as CV-1. Double fitting enables you to connect a gauge and charging line in series to one or any number of packaged refrigerant containers.

Send for 1959 Catalog — Dept. N-4

WATSCO INC.

1020 E. 15th STREET • HIALEAH, FLORIDA

Conditioned Lap and Hone Area Allows Close Measurement In Hydraulics Plant

VAN NUYS, Calif. — The multi-million-dollar plant being built here by Weston Hydraulics, Ltd. will include a lap and hone area which will be air conditioned to permit measurement of products to close tolerances.

Many of the products produced by Weston, a subsidiary of Borg-Warner Corp., "involve dimensions which must be measured to the nearest five-millionths of an inch," a company spokesman pointed out.

"In order to make such measurements possible, the lap and hone area will have a separate 10-ton system to maintain the accurate temperature and humidity conditions required.

"The system will contain an electronic air cleaner and will control the temperature at 71° F. plus or minus 1°, with a maximum relative humidity of 40%.

"Additional dust free assembly areas are also contemplated in this facility."

The new Weston plant will have an initial total area of 85,000 sq. ft. for the development and production of components for aircraft, missiles, and rockets. First units in the project will consist of a 75,000-sq. ft. manufacturing building and a 10,000-sq. ft. administrative building.

The air conditioned buildings will be located on a 32-acre site at Tyrone and Saticoy Sts.

General office areas, cafeteria, and engineering design department will be air conditioned by a York 75-ton direct expansion multi-zone system.

"The system is designed for economy control so that when the outside air temperature reaches an economical level, a maximum quantity of fresh air will be used," it was noted. "The York compressor will provide automatic capacity control for operating at reduced loads."

According to I. E. Weston, chairman of the board and chief executive officer, the firm has been a leading manufacturer of aircraft components for more than 15 years.

It now employs in excess of 600 workers in 11 buildings in North Hollywood. The company is expanding toward the 1,000 employes planned for the new plant.

Completion date has been set for July of this year. Charles Luckman Associates, planning-architectural-engineering firm of Los Angeles and New York City, is the architectural firm on the project, with William L. Pereira as associate architect. C. L. Peck of Los Angeles is the general contractor.

Hoover Ball & Bearing Plant Features Air Conditioned 'Plant Within a Plant'

ANN ARBOR, Mich.—An air conditioned "plant within a plant" is one of the features of Hoover Ball & Bearing Co.'s $3.5 million ball plant just outside Ann Arbor on the south side.

Operations were moved to the new facility last summer from the 47-year-old plant on Hoover in Ann Arbor. The division produces steel, stainless steel, brass, bronze, monel, and commercial-type balls.

The plant's "inner plant" is a rigidly air conditioned 20,000-sq. ft. area where bearings are assembled and balls undergo final inspection.

Air conditioning equipment serving this area was installed by Garlock Insulating Co., Lansing, Mich. The equipment includes a Carrier evaporative condenser and an air handling unit.

"These consist of two circuit coils of 50 tons and 25 tons, respectively, it was pointed out. There are two Carrier 6L40 condensing units (25 tons each), interconnected to make up the 50-ton capacity, and one 6L40 on the other circuit, giving us a total of 75 tons in the two systems.

"The condensing units have built-in capacity controls of four steps of compressor unloading per unit. This combined with the two separate systems and using a gas duct heater for reheat and winter heating gives us complete control over any cooling, heating, or humidity conditions."

Air Conditioned, of Course

Ball Bearing Plant's Inspection, Packing Done In Sealed Room

DANBURY, Conn. — Cleanliness and close control of temperature and humidity are important requisites in a $2.5 million plant opened here last fall by the Barden Corp.

The plant makes ball bearings for aircraft and missile guidance control systems, instruments, computers, high-speed cameras, and dental drills.

Final inspection, assembly, testing, and inner packaging operations are done in a room which is sealed off from non-critical departments and subject to special precautions to prevent entry of dirt or dust.

Personnel in the critical areas wear lint-free garments and enter through air locks or high-velocity air showers. Parts and materials enter through air-locked, pass-through devices in the walls.

Air is filtered and electrostatically cleaned. Its temperature is controlled at 75° F. and held to a maximum relative humidity of 40%.

Piped-in solvents for product cleaning are filtered at a central station. And a central vacuum system whisks away dust that may enter despite all precautions.

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SELLING FOR PROFIT.
By Frank Klein—Only $1.00 ea. Clip this ad and mail with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

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One of largest stocks in the world!
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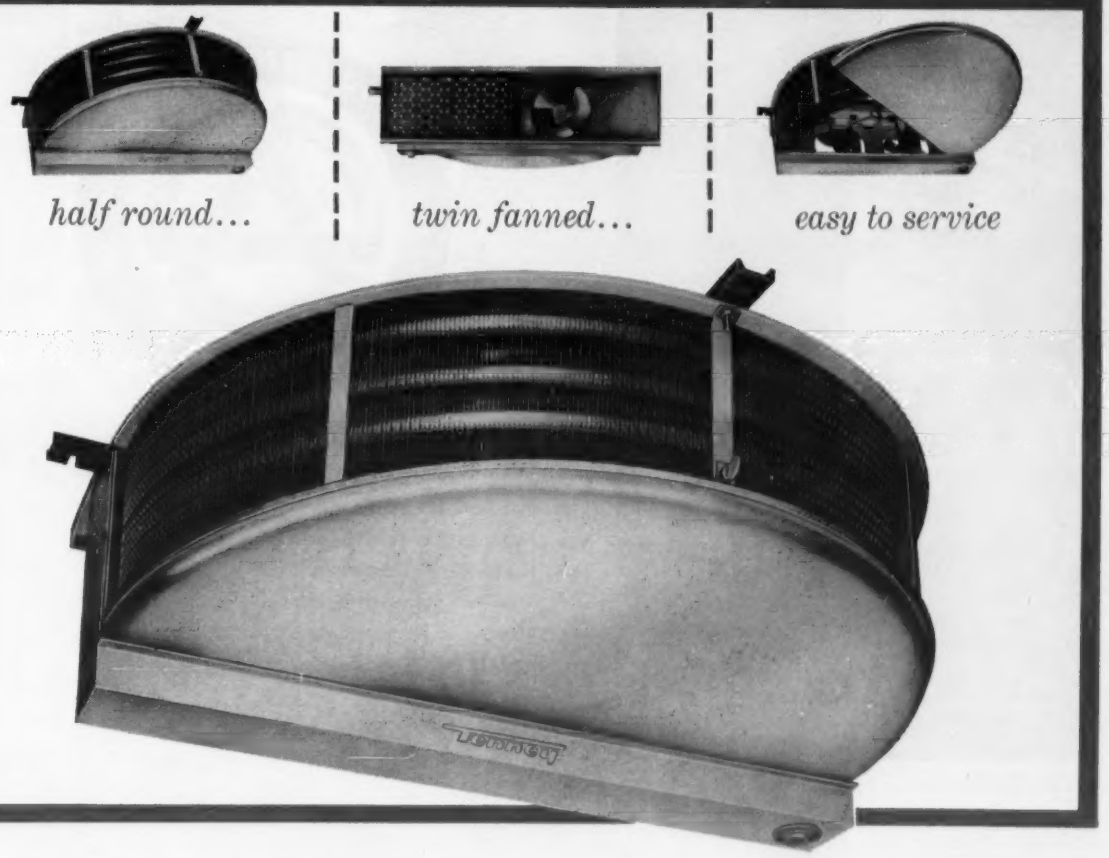

Tenney TW and TWF unit coolers with ALL-ALUMINUM HOUSINGS!

More cooling power per square inch and most convenient installation with Tenney's TW and TWF unit coolers than with any other comparable units—*and now they're built of lightweight, rustproof aluminum.* True half round design insures maximum air distribution. It hugs up tight against the ceiling and its unique design allows maximum product storage. Service is so simple—flick off a thumb screw and the entire unit is open, with all parts within easy reach. You never disturb existing refrigeration, electrical or water drain lines! And in case of emergency, *one* of the unit's two fan-and-motor combinations can maintain safe temperatures until help arrives. Standard filters are optional on both units. Write for literature and technical data on these new all-aluminum TW and TWF unit coolers today.

Write for Bulletin 104-54

Engineers and Manufacturers of Refrigeration and Environmental Equipment

Tenney ENGINEERING, INC.

1090 SPRINGFIELD ROAD, UNION, NEW JERSEY • PLANTS: UNION, NEW JERSEY AND BALTIMORE, MARYLAND

ASHAE Show In Miniature

Cincinnati Firm Sponsors Heating, Cooling Show on Small Scale for Its Customers

CINCINNATI—Local heating and air conditioning contractors who missed the ASHAE show in Philadelphia will get a small taste of what it was like when 30 manufacturer suppliers of Cincinnati Stamping & Furnace Co. exhibit their new products at booths set up in the company's warehouse, Ralph W. Grimme, secretary-treasurer of the company announced recently.

The "Stamco Products Parade" will appear on April 15, 16, and 17 from 1 to 9 p.m., Grimme said.

To arouse interest in the affair, Grimme asked for and received from each exhibitor a letter inviting the contractor to stop at the exhibitor's booth while attending the show, it was noted.

"Each day we are mailing a different supplier's letter to each and every one of our dealers, so that approximately four days before the show, each dealer will have received 30 letters of invitation," he explained further.

"Two days before the show we will mail our personal invitation to each dealer inviting not only the dealer but also his wife and children. There will be door prizes, food, and refreshments."

Invitations are also being mailed to local utilities and city inspection offices.

In Elyria, Ohio

Contractor Questions Legality of Heating Board In Licensing Hassle

ELYRIA, Ohio—If Lawrence Peniston couldn't answer enough questions to satisfy the city heating board of examiners that he should have an air conditioning license, neither could the board answer enough of Peniston's questions to keep him from doing business anyway.

Peniston, who operates Peniston Heating & Air Conditioning Co., brought the board's efforts to make him cease and desist doing business to a standstill by questioning the board's legality.

He sent the board scurrying to the city solicitor for answers —which haven't materialized yet.

Trouble arose when someone complained that Peniston installed two air conditioning systems without an air conditioning franchise or permits.

Peniston, according to city building inspector James Seres, applied last year for a warm air heating, sheet metal, and air conditioning franchise. He successfully passed the warm air portion but did not get a high enough grade for an air conditioning franchise. He was issued a warm air heating franchise and notified that he was not entitled to an air conditioning franchise, Seres said.

Thus, when the complaint against Peniston was received, the board of heating examiners considered it and ordered Peniston to cease and desist. His 1959 heating franchise was withheld pending a hearing. That was on Feb. 26, 1959.

Peniston, who did not attend the board's meeting, received his notice March 2. He immediately petitioned for an injunction against the board, which was granted.

In his petition, Peniston charged that the heating board had no authority to issue the order because it was not a legally constituted board under city ordinance. He pointed out that one board member was not a legal resident of Lorain county, as required; that another member did not hold a franchise, as required; and that there was no refrigeration contractor on the board, as required.

When Peniston showed up for the hearing on March 14, the board decided to take no action, pending a decision by the city solicitor on the points raised as to the legality of the board.

By so doing, the board nullified its cease and desist order and permitted Peniston to obtain his 1959 heating franchise, which he did.

Further action, according to Seres, awaits advice from the city solicitor.

This seal solves them all . . .

. . . ALMOST

The ARI Seal of Certification appearing on unitary air-conditioning equipment certifies that the unit's rated capacity is in accordance with ARI Standards.* This means that all units bearing the seal can be compared on a standardized basis. It means that you can now specify with assurance. It means that you can quote capacity ratings to a customer, knowing the facts are backed up by:

1—the reputation of the industry's trade associations,

2—the results of an independent testing laboratory, and

3—the good name of the manufacturer whose product you offer.

but . . .

As a dealer-contractor, it's still up to *you* to make the necessary measurements, computations and calculations.

You still have to come up with the proper specifications.

The Seal of Certification doesn't solve these problems for you.

It *does* solve the problem of determining which units meet your specifications.

And, since these units will do the job your specifications call for, you're spared the additional problems of complaints, service calls, dissatisfied customers, and mounting expenses for repairs or replacement of equipment.

The following manufacturers are participating in the program: Airtemp Division, Chrysler Corporation • Amana Refrigeration, Incorporated • American Blower Division of American Radiator and Standard Sanitary Corporation (American-Standard Industrial Division) • American Furnace Company • Arkla Air Conditioning Corporation • Armstrong Furnace Company, Division of National Union Electric Corporation • Bryant Manufacturing Company, Division of Carrier Corporation • Carrier Corporation • Columbia Specialty Company, Incorporated • Coolerator Division, McGraw-Edison Company • Curtis Manufacturing Company • Day and Night Division, Carrier Corporation • Fraser and Johnston Company • Friedrich Refrigerators, Inc. • Frigidaire Division, General Motors Corporation • Gaffers & Sattler, Division of Utility Appliance Corporation • General Electric Company • Gibson Refrigerator Company, Division of Hupp Corporation • Grove Furnace, Inc. • Hall-Neal Furnace Company • International Heater Company • Janitrol Heating and Air Conditioning Division, Surface Combustion Corporation • Lennox Industries, Inc. • The Majestic Company, Inc. • The Mathes Company, Division of the Glen Alden Corporation • Mueller Climatrol, Division of Worthington Corporation • National-U. S. Radiator Corporation • The Payne Company, Division of Carrier Corporation • Peerless Corporation • Perfection Industries, Division of Hupp Corporation • Rheem Manufacturing Company • Round Oak Company of Indiana, Incorporated • A. O. Smith Corporation • Southwest Manufacturing Company • Therm-Air Manufacturing Company • The Trane Company • Typhoon Air Conditioning Company, Division of Hupp Corporation • United States Air Conditioning Corporation • Westinghouse Electric Corporation • Worthington Corporation • York Division, Borg-Warner Corporation

Look for this seal . . . the seal that helps you sell

For free explanatory booklet and Directory of Manufacturers participating in the Seal of Certification program, write to: Chief Engineer, Dept. A4, Air-Conditioning and Refrigeration Institute, 1346 Connecticut Ave., N. W., Washington, D. C.

*"Unitary" air-conditioners: Packaged air-conditioners, whether single units or combined units (called "split" systems), but not including room air-conditioners or heat pumps. ARI Standard 210-58 for electrically-driven equipment; ARI Standard 250-58 for heat-powered equipment.

Frigidaire Names 3 To New Posts

DAYTON—Richard E. Gould, chief engineer of Frigidaire Div., General Motors Corp., has announced the promotion of Edmund F. Schweller, assistant chief engineer in charge of refrigerated appliances, to executive assistant chief engineer.

C. H. Wurtz

E. F. Schweller

J. M. Murphy

Schweller will assume new responsibilities for Frigidaire's over-all product engineering activity.

Gould announced two other engineering staff appointments.

Clifford H. Wurtz, major product line supervisor in charge of refrigeration systems for refrigerators and food freezers, has been promoted to manager of refrigerated appliances engineering, a part of the activity formerly headed by Schweller.

John M. Murphy, major product line supervisor in charge of refrigerator and food freezer compressor development, becomes manager of a newly-created compressor engineering department.

Store Room Burns

CHARLESTON, Tenn. — A one-story building used as a store room by James G. Bell Refrigeration & Air Conditioning Co. was recently destroyed by fire of undetermined origin.

the quality tells . . . the quality sells

new JANITROL

WIN-SUM-MATIC

year 'round air conditioner

COMPACT . . .

Fits in as little as 3⅗ square feet!
Features Dura-Tube Gas Heating Heart
and powerful air-cooled cooling

WESTERN UNION

HARRY C. GURNEY, General Sales Manager,
Janitrol Heating and Air Conditioning Division,
Surface Combustion Corporation,
Columbus 16, Ohio (In Canada: Wire Moffat's Ltd., Toronto 15)

RUSH ME FACTS ON JANITROL'S SELECT DEALER PROGRAM.

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WIRE COLLECT FOR PROOF...

You'll do better by far as a Janitrol Select Dealer!

Janitrol's Select Dealer Plan does what other plans can only claim to do...adds new depth and dimension to Dealer Growth and Profit Potential!

HERE ARE THE HIGHLIGHTS...

1 **The Finest Factory Technical Training Program** in the industry . . . tuition-free for Select Dealers!

2 **Personalized Dealer Management Services** . . . expert guidance in all phases of management, including sales training, recruiting, accounting, advertising, and engineering available to Select Dealers at no cost!

3 **Dealer Information Service** . . . authoritative newsletters, bulletins and periodicals keep Select Dealers up to date on latest developments in equipment, applications, service and merchandising slants!

4 **Regular Regional Meetings** . . . bring Select Dealers and Janitrol personnel together for stimulating discussions of merchandising, management, engineering and other subjects pertinent to dealer growth and profit!

5 **Liberal Dealer Stocking Plans** . . . assures the equipment required by Select Dealers will be on hand when needed.

6 **Free Retail Salesman Training and Aids** . . . Janitrol helps recruit and train salesmen for Select Dealers. Provides proven, sales-clinching presentation manuals for cooling, heating, and new home builder selling!

7 **Protected Territories** . . . Select Dealer Franchises in any market area are limited. No "free-wheeling" franchising to choke off profits!

8 **Powerful Planned Co-op Advertising** . . . a year-round program of hard-hitting local level advertising and promotion prepared for you by experts!

9 **Powerful National Advertising** . . . to create demand in your own local market for Janitrol products—back up your sales and promotion activities!

10 **Promotion Package Worth $300.00** . . . for newly franchised Select Dealers. Includes illuminated signs, floor and window displays, colorful literature, demonstration kits, etc.

11 **Yellow Page Telephone Listings** . . . reserved for you, as a Select Dealer, in your own local phone book under the JANITROL headings.

12 **Competitive Pricing** . . . made possible by famous Janitrol advanced engineering and new automated production lines. Puts Select Dealers in the driver's seat with quality at low cost!

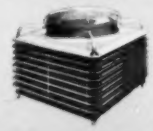
13 **The Top Brand Name** . . . Janitrol leadership in design and quality is nationally recognized and acclaimed. Over two-million Janitrol units have been sold!

14 A Great Line To Sell, a Full Line to Sell, topped by the One and only Win-Sum-Matic!

Win-Sum-Matic is the year 'round conditioner designed with you in mind! It's years ahead in design and performance . . . offers a 20-year warranty on the heat exchanger, and new time-saving ease and simplicity of installation.

There's new freedom of accessibility for adjustment and service, too . . . new quietness and thrift in powerful air cooled cooling and clean gas heating! And to top it off, surpassing new beauty and refinement of line and color . . . the trim, slim "look of the future" packed with sales appeal.

Get the full story on Win-Sum-Matic and other quality products in Janitrol's full line . . . Plus the fabulous SELECT DEALER PLAN! WIRE COLLECT RIGHT AWAY!



Exclusive Pride O' Yard Compressor-Condenser is low, streamlined, beautiful. Top-mounted fan boosts cooling performance . . . operates up to 125° F. Throws exhaust air upward . . . protects plants and shrubs.

be a JANITROL® Select Dealer!

WIRE TODAY COLLECT FOR ALL THE FACTS

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

fire it with an M-1 rifle, much as a grenade is launched now.

"I use potassium chlorate, naphthaline, sulphur, and a secret catalyst as a propellant," he reveals. "The army previously has called potassium chlorate impractical because it goes off with a force that shatters the metal rocket shell.

"My catalyst working somehow with the copper slows down the action of the propellant so the shell is not damaged. It works only on copper, though, not steel. I fired 12 rockets last summer and all but three were successful."

Denmon has interested the commanding officer of his National Guard unit in his work, has talked to Detroit ordinance people, and has met with Chrysler missile plant engineers.

"The Chrysler people were interested in the rocket, but I would not divulge what the catalyst is until I have it patented. I have yet to solve two chemical equations before I am sure enough to apply for a patent."

Denmon, who fired his rockets on a flat trajectory, did his launching from a friend's farm 10 miles east of Ann Arbor. Some of the missiles he fired into a private lake, others into sand dunes. None were recovered.

But the missiles, by the very fact that they traveled with such speed that they were invisible, were successful.

"I think a rocket of this type fired by an infantryman, could be effective against tanks," he insists.

Trade Papers

Refrigeration serviceman Denmon, who graduated from Central High School in Detroit last June, said he gained much of his knowledge from science courses at Cass Technical High School during his freshman and sophomore years.

The rest he gleaned from scientific journals, trade papers, and books in the public library.

He did not go on to college because he had no money and, while his marks were high in scientific subjects, they were mediocre in others.

"I have a hard time buying my chemicals. I have been working since I was 12 on developing a rocket propellant, but until a year ago I had to do it all in my head and on paper, because I couldn't buy the equipment I needed.

"I know it sounds funny, but I would mix my chemicals right outside on the lawn. I'd spray the lawn until it was soaking wet, then sit down right in the middle of it because water neutralized the stuff I work with.

"I discovered my catalyst by accident. I took stuff out of the wrong bottle. When it worked I had to find out what I put in it.

"I guess the history of discovery is full of crazy things like that, but this mistake tonight is something else. Do you know if Thomas Edison ever spent the night in jail?"

Human Small Business Story

The following letter is, in our opinion, a fascinating human business document. This is the sort of shoestring operation which has made America great.

Haaser Sales Co.
Fremont, Ohio

Editor:

A few months ago I wrote you in regards to giving me some useful help in trying to sell our new product which we manufacture, the "Bantam" roller dolly. You stated at the time that above all else we should have patience.

We have been working and plugging our product and now I am happy to write to you that we have sold pretty close to 200 since last October when we first came out with our little "Bantam."

We have had orders from all over the U.S. and so far have sold five in Canada and another man in New York who works in a New York Puerto Rico trading company, wants to advertise and sell in Venezuela, Puerto Rico, Guatemala, and other South American and Latin American countries.

Another man in Miami wants to sell in Florida, still another in Salt Lake City ordered 25 and is setting himself up as a distributor. Things have gone very well and we hope it will continue.

In December you ran a short editorial item in your New Products Section of your AIR CONDITIONING, HEATING & REFRIGERATION NEWS and you'll never know how Mr. Haaser and myself appreciated that fine write up and picture.

We are slowly getting our little business under way and as long as we continue to send advertising to the different cities and the different magazines help us, I'm sure we shall continue to do a good job of selling.

I have ordered phone books from different cities, then I go through the yellow pages and pick out all the air conditioning and refrigeration men and I send them literature and a return order card. This seems to be working out very good, and we have been continuously busy getting the advertising sent out.

In a bulk rate we found it to be a lot cheaper and by continually trying to make our product better we are, I believe, accomplishing our goal.

We have found that by using aluminum rollers we can save money and yet the Bantam is just twice as strong. At first we made only one model which we called the standard. It consisted of just two rollers and had a carrying capacity of 1 ton, now we have the same dolly but it has a capacity of 2 ton.

Then we came out with a similar roller, but instead of using two rollers, we made it with four. We call this model the deluxe and it has a carrying capacity of 4 tons.

Our newest addition to the Bantam family is the Baby Bantam. It is just the roller section of the deluxe model and it has a carrying capacity of 2 tons and is usually sold in a set of four.

This particular little Bantam fits under the corners of extra large equipment such as cooling towers, etc.

We received a very nice letter which read in part . . . "We received the 1 ton dolly from you today. It is a clever gadget and seems quite sturdy. So we are ordering another one. Until now we were moving equipment on pipes and this now will eliminate that old fashioned method. Thank you for helping us out."

We were very proud of this statement.

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Air Conditioning Seen by Architect as Aiding Population Shift Back to Cities from Suburbs

NEW YORK CITY—How will widespread use of air conditioning affect residential architecture, dwelling location, and living habits?

Some interesting speculation on these subjects came from Carl Koch, well-known Boston architect, in a presentation at the recent "seminar on air conditioned living" staged here by Carrier Corp.

"We have all been made aware that the air in many of our major cities is simply not fit to breathe," Koch said.

"Los Angeles is becoming known as the unhealthiest place to live in the middle of the state which boasts that its climate and physical conditions are the best in the world. As I understand it, in London, the best gauge for determining the state of the atmosphere is checking the hospitals for the incidence of admission for respiratory diseases.

"I, myself, can remember very clearly the wonderful view of Boston from my house on the top of the hill in Belmont. The pall of soot and smoke was so obvious and heavy, I wondered even then that it was possible to live and breathe in an atmosphere so obviously dirty. I felt every morning coming down from my hill as though I was plunging into a coal bin, and that I should hold my breath till the end of the day when I returned to the hills of Belmont," Koch declared.

Desireability of Living In City Obvious

"That was nearly 20 years ago. Since then I've moved another 15 miles from Boston and spend nearly an hour a day breathing the exhaust of the car in front of me. Pollution or no pollution, I am beginning to realize the desirability for many of us of living in the city. Almost all growth, whether it is urban or suburban, is related to our metropolitan centers, and increasing number of us are becoming interested in living back in the center itself.

"Air conditioning is certainly one obvious way to tackle one of the main reasons we moved out of town to begin with, because it helps make it possible for us to move back to the city. Urban renewal is receiving its impetus from this urge to return to the city as well as the urge to stop the economic waste of progressing urban blight," he said.

Air Conditioning and Urban Renewal Projects

"The relationship between planning and air conditioning is perhaps most obvious in connection with this urban renewal projects. For instance, one of my principles is that no housing unit should be built which does not get sun sometime during the day. On the other hand, the load which the sun, during hot summer months, places on air conditioning systems becomes unsupportable in a high building if it isn't properly deflected.

"One finds designers going so far as to turn whole buildings affecting all the outlook of as many as 200 to 500 people at one time at right angles to either the best sun or view orientation in order to cut appreciably the air conditioning load," Koch explained.

"I'm going to come back to air conditioned urban planning in a minute, but first I want to discuss several elements that will effect air conditioning in the design of houses. It is obvious from what I have just said that in the future air conditioning will incorporate much more than merely the cooling most people think of today.

"In addition to the necessity of purifying the air we breathe, especially close in to the city, the effect of humidity on our health and belongings is well know. Both of these are obvious aspects of air conditioning that are already being taken into serious consideration.

"We now realize that it is possible to eliminate odors, virus, bacteria, pollens, radioactive material, and other contaminants. It is also equally possible to add medicinal aerosols, and negative ions, if we finally decide they are beneficial, not to mention the odors of spring and the essence of roses," Koch suggested.

"When we begin to think about the effects upon us of having our indoor atmosphere more healthy than our outdoor, one can begin to see the effect this might have on planning in an affluent society. We are still laboring under the delusion that opening the window lets in fresh healthful air and clears out the bad from the inside.

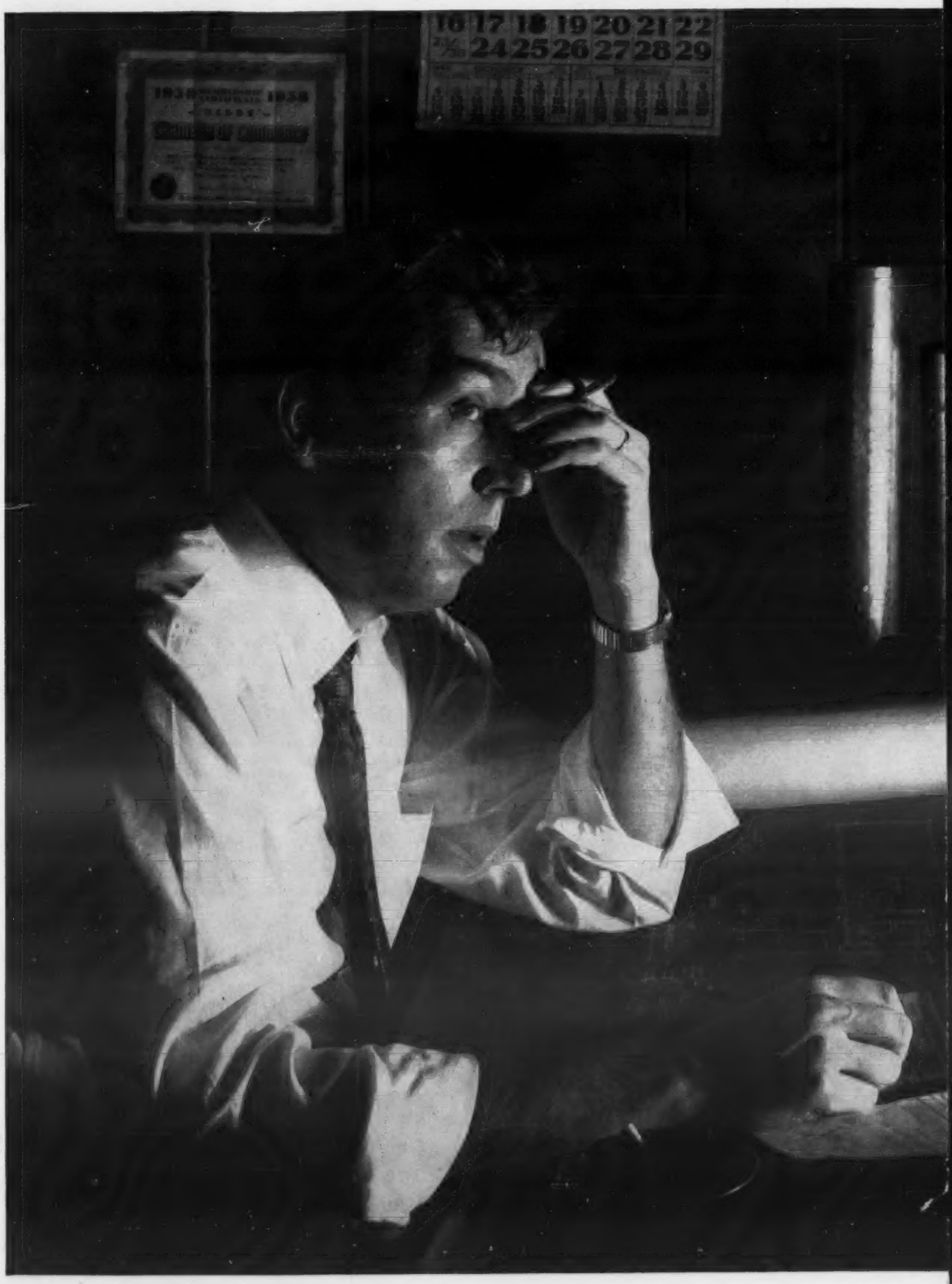
"When we get to the point of feeling comfortable about closing the window to keep the unhealthy outside air out, this inward looking in our housing is going to have obvious effects, many of which are already discernable in recent patio house designs," he declared.

Methods of Covering Space Economically Increasing

"People in general will want to arrange their activities so that they can take place within the house. This is going to require a great deal more space, and the varieties of space will be much larger. This, I think, is not going to be so impossible to realize because although the cost of building is going up rapidly, the methods of covering space economically are also increasing in their number and effectiveness.

"Many of us have noted with interest the air supported roofs of one sort or another, as well as the geodesic structures of Bucky Fuller and his followers. There are a number of methods of using a lot less material with varying useful light and heat transfer properties to do a lot more work for a lower cost," Koch said.

"This large amount of clean air within the house will have considerable effect on a number of related factors. If a house is much easier to clean, we don't have to design all surfaces and shapes from the point of view



of cleaning only. We can look at our surfaces from a new point of view and use a wider range of textures and more delicate materials.

"Most of today's low maintenance surfaces tend to be hard, slick, and unsympathetic to the eye and touch. The architect will have at his command a much larger pallet of textures from the soft and rough to the hard and polished," he predicted.

"Our recognition that the floor is no longer a dirty, damp, and drafty place may lead to shaping our floors and walls as a further extension of the building-in of furniture, which is already quite common.

Landscaping and Other Sun Shading Devices

"Landscaping is already becoming a functional and economic factor as well as important aesthetically in the planning process. Builders are beginning to realize the practical as well as the aesthetic importance of trees, shrubs, and vines for shading. Architects are increasingly realizing the importance of shading devices built in as an integral part of the house exterior as a large determinant in the appearance of a house. Porches, for instance are beginning to come back just at the time when builders perhaps began to feel they had disappeared," Koch commented.

"There is a great deal more we can and should do regarding removable sun shade devices. In many sections of the country our weather is so variable that we want and can now get entirely different exterior wall surfaces at several times of the day. The old New England shutter can be modified as to material and operation and can come back into its own with very good functional justification," he suggested.

Cites Trends In Energy Sources

"Just a word about trends in energy sources. In the first place, we can expect rapid improvement both in the techniques and economies in central heating and cooling sources with conventional fuel. The heat pump . . . is becoming practical over a wider climate range all the time. Solar energy for cooling as well as heat, though not here yet, over wide areas is becoming more practical all the time.

"In connection with solar energy for heating and cooling, we should remember that fuel cost, which we avoid by harnessing the sun, is only about 15% of the total electrical power cost. The other 85% is transmission cost. This is saved if the energy can be generated right in the house.

No Need for Windows To Provide Ventilation

"One of the interesting design aspects of air conditioning is the reversal of attitude toward windows. With air conditioning, only the function of lighting remains for a window to perform. There is no excuse for windows looking across a narrow alleyway to the next house just in order to provide cross ventilation.

"Artificial ventilation has taken bathrooms away from outside walls, and it is quite conceivable that bedrooms and even studies and kitchens may follow this course. This would enable the more active living spaces to be on the perimeter of the house with a more active visual and physical contact with the site," Koch declared.

"As architects, we have for some time been looking for the best ways to reduce the cooling load of air conditioning, both to keep the original size of the installation down and to minimize the cost of operation. Orientation is, as we know, the main concern here. And particularly in the design of multi-family and multi-story construction it becomes an absolutely vital concern.

"The converse of the same arguments applies to atomic energy locally generated. There is a 5-lb. atomic battery generator which I understand is at least on the horizon. Obviously, any increase in the economic amounts of energy we can use to cool and service the house will have tremendous effects on areas and types of service we can make available," he said.

"Perhaps one of the most important design factors to be considered in connection with air conditioning is the integration that can and must take place in the whole housing industry. The tremendous expansion in homebuilding which is just beginning to get under way is going to force a rapid improvement in the technique of building. We are no longer able to afford either in time, men, or materials the piece-meal approach to housing. We can expect integration to take air conditioning beyond the combination of cooling and heating units to the arrangement of distribution and control throughout the dwelling unit.

"This will have to be done either by having the air conditioning business, like Carrier, provide elements of the structure and some of the other services such as electrical and plumbing or conversely to turn over their facilities on a subcontract basis to elements in the industry that will coordinate their equipment in the factory with other related parts of the house.

"Heating and plumbing both suffer at the present time from the need to perform far too great a part of the work of installation by handicraft methods at the job," criticized Koch.

Attempts To Combine Structure, Heating, Cooling In Package

"It is for this reason that we see so many attempts already to combine structure, heating and cooling in the same packaged system. Another approach to the structural problem, probably more conducive to success, will be the complete package combining heating and cooling with kitchen, laundry, lighting, and plumbing. The cost of operation may well be decreased by combining all these services in a related core grouping. This type of approach suggests a central installation, and I am sure we will see considerable progress and success in this type of approach," he predicted.

"On the other hand, the successful miniaturization and the advantage in flexibility to be derived through separate provision of these service facilities is working in the other direction—the decentralization of service equipment including air conditioning.

(Concluded on next page)

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Cooling Speeds Move Back To Cities--

(Concluded from preceding page)

"We have seen room size air conditioners get less and less unsightly and bulky, and for many types of installations there will be a continuing trend in this direction to the complete disappearance into the wall, ceiling, or floor of a number of small individual decentralized units.

"This technique has one considerable potential advantage—that of service. It is easier to conceive of small decentralized units being supplied on a plug-in basis. Obviously providing service by replacing defective units with new ones and shipping the defective ones to the factory for repair has many advantages in today's market and in relation to our probable future labor situation," Koch explained.

"In working with the problem and possibility of urban renewal and in our analysis of the particular advantages of air conditioning, both of these subjects have lead us in the direction of studying ways to save outdoor space in city planning while providing more and better indoor space.

"It is becoming obvious that for many people the unpleasant problems which come with living one or two to the acre have already cancelled out the pleasant possibilities. Transportation access to services, recreation, even light and air, have receded faster than we have travelled outwards from the city to find them.

"We have been making studies to see how many of the pleasures of suburban living can be retained in building anywhere from eight to 80 family units per acre. It is certainly not hard to conceive of easier access to open, unspoiled land from such site-conditioned neighborhoods than is provided by our present self-defeating suburban planning," Koch commented.

"We are exploring with Carrier now some of the interesting possibilities in air conditioning the whole lot instead of just the house itself. We hope you will agree that the possibilities are good both for healthier saner living and the future of the air conditioning industry."

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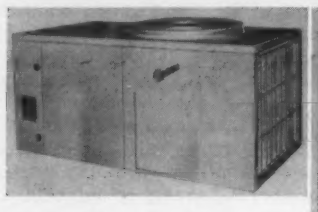


RIGHT: New "EK" Series remote air-cooled condensers introduced by Southwest Mfg. Co. are available in 2 and 3-ton capacities.

FAR RIGHT: Air Conditioning furnace by Southwest features built-in space for evaporator. Over-all height of the furnace, according to the manufacturer, is only 69 in.

Southwest Introduces Varied Line for '59; Gas Furnaces Allow Space for Cooling

AURORA, Mo. — Southwest Mfg. Co.'s new line of residential heating and air conditioning products was introduced to regional sales managers and field salesmen at a recent three-day sales conference.

Ben Church, general sales manager, introduced the line.

All of this firm's forced warm air furnaces are designed to be used in conjunction with central air conditioning.

Highlight of the conference was the introduction of Southwest's new gas-fired furnaces featuring built-in spaces for the air conditioning evaporator as well as a built-in control panel for the air conditioning system. The new line is "high style in appearance emphasizing the shadow box effect and is finished in decorator colors of charcoal and light gray."

For the first time in Southwest's history, a line of oil-fired furnaces was introduced. The new oil line is offered in hi-boys, lo-boys, counterflows, and horizontal models. Burners are enclosed and are mounted and wired at the factory. The oil-fired furnaces are also designed for use with central air conditioning.

For several years Southwest has manufactured air-cooled central residential air conditioning equipment. It is now offering a new economy line of remote equipment in 2 and 3-ton capacities.

Designated as the EK series, the new models are available either with receiver for use with expansion valves or without receiver for use with capillary tube systems.

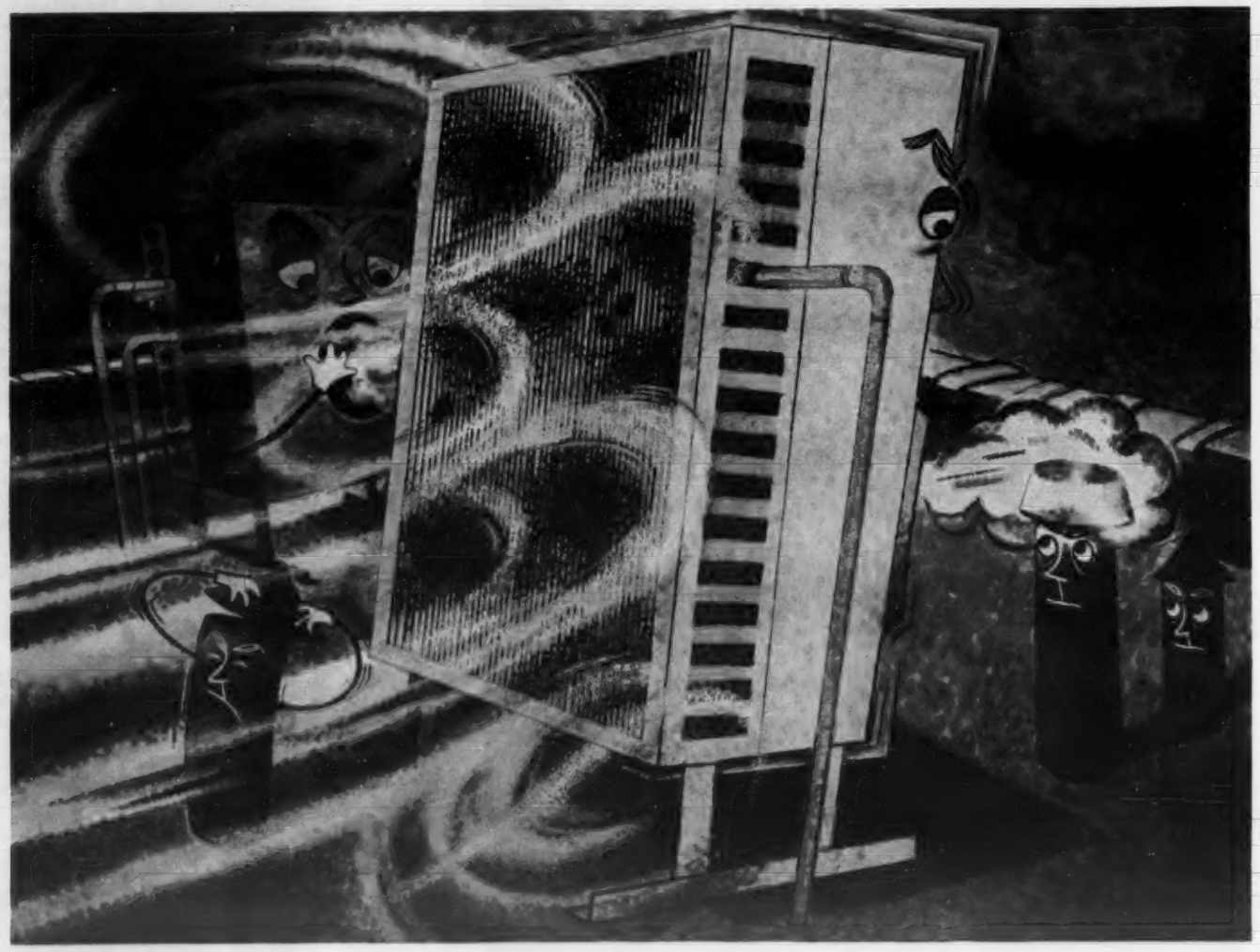
The EK series is priced to fit modest budgets and is "aimed to provide true conditioned air to the mass market."

New blower-evaporator units were introduced in capacities from 2 through 7½ hp. These air handling units are applicable for residential and light commercial use with remote air-cooled condensers.

In addition to the new central equipment, Southwest's salesmen were introduced to the complete "Heatwave" line of gas-fired floor furnaces, wall furnaces, and new lines of evaporative coolers.

Roy C. Hauck, Southwest president, outlined the company's program of expansion and growth. He stated that "Southwest's sales have increased monthly and that the rate of increase is accelerating. In view of the brighter economic outlook for 1959 and the increase in housing starts, Southwest will enjoy the best year in its history."

Also present at the meeting was C. Ginn, Jr., chairman of the board of Southwest and president of F. E. Myers & Bro. Co. of Ashland, Ohio. Ginn reaffirmed the parent company's interest in Southwest's program and progress "toward a leading position in the conditioned air field."



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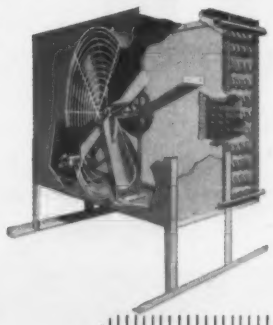

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'Armor-Weave' Mesh Protects Room Units From Sun, Provides Attractive Hotel Facade

DENVER—Not only an attractive facade, but also longer life for room air conditioners used in 40 rooms on the west side of the building are results of an "armor weave" mesh installation at the Mayflower hotel here.

Lad A. Felix, owner, bought the old 100-room hotel, originally constructed in 1925, during 1946. Since then he has spent $200,000 on modernizing it into a highly unusual, profitable hotel-motel combination.

The Mayflower currently offers 125 air conditioned rooms, 45 of which are located in a five-story "motel annex," built on a former parking lot to the left, and the rest in the hotel proper.

A 35-ton central system was installed for the new motel area, while separate 1-ton units went into the original hotel building. Felix bought the room units as a "stop-gap," intending to install a central air conditioning system later on, when finances made it possible.

One of the problems associated with the use of room coolers in the old building was the fact that the west side, built of dun gray brick, represented an extremely heavy heat load; so high, in fact, that the units were in almost continuous operation from noon until dusk daily.

Felix, at the same time, was anxious to modernize the west side of the building which faces on the downtown district and, eventually, found an opportunity to "kill two birds with one stone" when he hit upon the idea of covering the entire face of the building with "expanded metal" armor-weave mesh.

It was installed at a cost of $8,000, by running vertical rails every 3-ft. up the front of the building and attaching convex panels of the heavy expanded steel mesh.

The hotel operator chose the mesh both for its appearance and because it could cut down considerably on the heat load problem from the direct rays of the sun.

In working out the deal, Murrin & Kasch, architect, made it possible to leave the room coolers in their window sill locations by specifying the panels in a convex arc which provided plenty of space within the arc for each cooler to project out of the window.

By designing the front in this way, 17 vertical columns were produced, which extend out individually around 14 in. from the window sill.

An unexpected "bonus" developed in the installation of the mesh. It was found that the hollow area behind each column automatically became a "flue," causing heated air to rise swiftly up the columns, to be exhausted at the top.

While no consideration had been given to this possibility in the original construction, a check showed that the combination of shielding from the sun's rays brought out by the reflecting, gold-finished mesh, plus convection from bottom to top to the convex tubes "worked wonders" with room air conditioning.

Not only was the ability of each unit to cool the room during the hottest periods of the day insured, but it was likewise found that the air conditioners operated from one-third to 50% less per day because of the cooling effect of the rising air.

ERECTION of "armor-weave" mesh, shown in progress here, resulted in reducing operating time of room air conditioners and also provided an attractive facade for the Mayflower hotel in Denver, according to the management.

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SO THROUGH HENRY'S INTERCESSION, BIGDOME PUT CUBEB ON THE PAYROLL--DOES CUBEB THANK FRIEND HENRY? LISTEN....
THANKS AND A HAT TIP TO MANY CONTRIBS
WELCOME TO THE ORGANIZATION, CUBEB! I KNOW YOU'LL LIKE IT HERE--IT'S A GOOD OUTFIT--
YEAH--MY BROTHER-IN-LAW'S DONE A LOT OF FAVORS FOR BIGDOME--MY BROTHER-IN-LAW MENTIONED I WAS AVAILABLE, AND BIGDOME MADE ME A VERY NICE OFFER--BE SEEIN' YA, KIDDO--
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There will be totally new solutions to traffic problems, involving not-yet-seen types of construction. Smokeless office buildings will take their power from the sun, and will be air conditioned not only for comfort but to improve health.

Downtown shopping centers will comprise a collection of revolutionary-type buildings fabricated from synthetics, and interspersed with landscaped malls. No parking problems, as we have nowadays.

Factories will draw their water from the air, pull in power by wireless transmission and, like offices and homes, utilize sun's rays for purposes not now employed.

Expectations for a "renaissance of the city," such as those elaborated upon above, were stowed away recently in the cornerstone of the new national headquarters building of the Associated General Contractors of America in Washington, D. C.

Contractors, that's just a beginning!

Other advances in architecture, equipment, and materials—with all of which contractors deal—predicted by "in the know" friends of the NEWS:

Factories with underground parking facilities and landing platforms for helicopters. Hence, lower real estate costs, and higher profits for general contractors because they'll do much more comprehensive on-site installations.

Superhighways and expressways (many of them double-decked) with built-in heating devices to keep them free of ice and snow, plus built-in traffic safety aids.

Daylight-equivalent illumination which can alter the color and design of interior walls with the touch of a switch. Mama won't redecorate so often, and will Papa be happy!

One-way-see glass — offering inward privacy in any office or room, along with an unparalleled view of the outdoors or of would-be visitors, welcome or unwelcome. Also coming: special kinds of glass which will admit beneficial rays of the sun, and screen out harmful rays.

Ionization control via air conditioning will improve efficiency, health, and happiness of office and factory workers (see a recent "Inside Dope" for preliminary report).

Industrial buildings will be prefabricated and assembled on the spot, just as some small homes are now. Likewise, skyscrapers. Interior finishing will be performed by automatic machines, directed by two or three skilled operators from central control stations—in contrast to the legions of slowpokes who operate by hand in this field now.

Big building prefabrication will embrace flexible strip units (of variable dimensions) that will include packaged facilities for heating, cooling, lighting, air conditioning, sound controls, and health protection.

Both inside and outside panels of these projected big buildings may consist of lightweight aluminum coated with porcelain enamel glass; whereupon they could be fluorescent. Thus, exterior walls would *glow* for promotional effect on passers-by—while inside room walls should provide *in themselves* all the light needed by occupants.

North America—in contrast to Europe, Asia, and Africa — probably will skip nuclear power. By the time atomic electricity becomes economically competitive here, advanced forms of handling fossil fuels—plus solar power and such exotic devices as the fuel cell—probably will be favored by contractors in this country and Canada.

Radio transmission of electrical energy (however derived) will eliminate the need for wire and cables. Hence homes, factories and offices may receive their power sustenance by induction. What a boon that will be for architects and consulting engineers! And community planners!

Another prediction: air filtration and germ sterilization will turn out to be prime objectives of contractors, architects, and consulting engineers.

Exciting prospects, these. Surely they insure a lively, healthy future for contractors, as well as for the consulting engineers and architects and big contractors.

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AIR CONDITIONING HEATING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

Published Every Monday by BUSINESS NEWS PUBLISHING CO., 450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924. Subscription Rates: U. S. and Possessions and Canada: $6.00 per year; 2 years, $9.00; 3 years, $12.00. All other countries: $10 per year. Single copy price, 40 cents. Ten or more copies, 30 cents; 50 or more copies, 20 cents each. Send remittance with order.

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VOLUME 86, NO. 14, SERIAL NO. 1,567, APRIL 6, 1959

"A newspaper conducted on the true and natural principles of such a publication ought to be the register of the times, and faithful recorder of every species of intelligence. It ought not to be engrossed by any particular object, but, like a well-covered table, it should contain something suited to every palate."—*John Walker.*

OFF THE CHEST

PATRIOTISM EDITORIAL DRAWS GENEROUS PRAISE

McWhorter, Weaver & Co.
Nashville 3, Tenn.

Editor:

Congratulations on your excellent editorial "Business Men Have a Prime Duty — To Be Patriotic!" in your Feb. 16 issue of the NEWS.

Your comments were very similar to those made a year or so ago by Ralph Cordiner, at that time president of the General Electric Co. and now chairman of the board, to the management of General Electric and to businessmen in general.

I would like your permission to quote liberally from your editorial, giving proper credit for its source, at several upcoming sales and civic meetings.

I would like to take advantage of this opportunity to say, as I have said many times before, that I feel that your publication is the most current and newsworthy in the industry. Keep up the good work.

B. H. MCLAIN, Manager,
Air Conditioning Dept.

* * *

Servel, Inc.
Evansville, Ind.

Editor:

Your editorial of Feb. 16 is one of the best of the many that have come to my attention. Congratulations.

LOUIS RUTHENBERG

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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Los Angeles Proposal Would Ban Open Control Wiring for Heating, Cooling

LOS ANGELES — Electrical Div. of the Dept. of Building & Safety proposes to rescind Bulletin No. 2 adopted in 1956 permitting installation of control wiring for all types of comfort heating and cooling equipment without enclosure in conduit.

Present electrical code requires a permit for control wiring. However, effect of the action by the Board of Building & Safety Commissioners when they adopted Bulletin No. 2 was to waive requirements of the electrical code for a permit and inspection.

If Bulletin No. 2 is rescinded, then a permit and inspection will be required for control wiring.

Rescinding Bulletin No. 2 would also prohibit the use of open wiring for control systems for all types of heating and cooling equipment including heat pumps, humidifiers, duct furnaces, evaporative coolers, and various types of air conditioners.

In view of the complexity of control systems being installed with some of the newest types of air conditioning equipment, there is an ever present possibility of the accidental energizing of motors or other utilization equipment when control circuits are run as open wiring, it was stated.

The opinion of the Electrical Code Advisory Committee engaged in preparation of the 1959 Los Angeles Electrical Code Amendments, is that use of open wiring where it may in any manner energize a motor, presents a hazard.

If the commissioners follow the department recommendation on the request of the Electrical Div., Electrical Bulletin No. 2 will be rescinded April 22, 1959.

The department has notified all concerned with the change. A. B. Wicks, chief of the Div. of Heating & Refrigeration, presented it to the Southern California Chapter, ASHAE.

Widen Scope of Night Cooling Course at San Jose Junior College

SAN JOSE, Calif.—The industry has given "marvelous acceptance" to the air conditioning course taught by Everett Miller, said John H. Dunlea, business manager for Sheet Metal, Heating, Refrigeration & Air Conditioning Contractors of Santa Clara County.

Miller has increased the scope of the course, and is covering more subjects, Dunlea said, dividing the time between lectures and laboratory work.

Miller is a mechanical engineer in plant engineering at the large International Business Machines plant here. He was with Frigidaire earlier.

He teaches an evening class for three hours every Monday, at San Jose junior college's technical division. Books required for the course are the Trane air conditioning manual, Trane refrigeration manual, National Warm Air Heating & Air Conditioning manuals, and Frigidaire residential air conditioning manual.

Miller teaches load calculation, selection of equipment, theory and application of air movement and psychrometrics, basic refrigeration, and electrical theory.

The class is for those in the field covered by contractors state license board specialty classification C-20 for warm air heating, ventilating, and air conditioning.

Enrollment stabilized at 37 the first semester, and 33 enrolled for the current second semester will all but two of these continuing from the first semester.

Miller said eight weeks was spent on residential air conditioning the first semester. The course is now on commercial air conditioning.

As a result of his experience with this course, Miller, another year, would recommend making the work of one semester strictly on commercial. For residential he would have a separate course in a different semester, so students could progress.

Miller is now bringing in outside instructors from Minneapolis-Honeywell on controls, General Electric on fractional horsepower electric motors, Fiberglas on filters and insulation, and Trane on self-contained air conditioners.

Specialty Blower Div. Formed by Torrington

TORRINGTON, Conn. — A new Specialty Blower Div. has been formed by The Torrington Mfg. Co. specifically for the design and manufacture of blowers for electronic cooling and other airborne and ground applications.

"While Torrington's Air Impeller Div. has stressed the development of new impeller types for many years and recently introduced several new cooling blowers, the expanding demand for special units in electronic and military equipment and the relatively large proportion of engineering involved in their design has resulted in the organization of a separate operating division," it was explained.

The Specialty Blower Div. will draw upon Torrington Mfg.'s full engineering staff and facilities, in addition to its own design and sales groups, according to C. A. Hathaway, director of engineering, who will be in charge of the division.

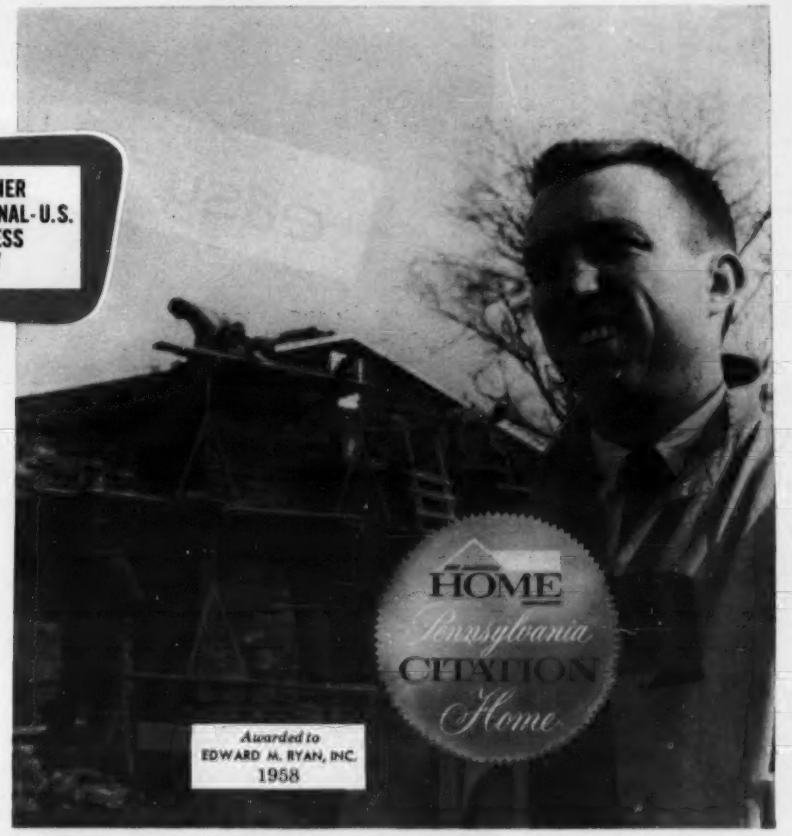
Contractors Give Aid on Codes In Calif. Area

SAN JOSE, Calif. — Assistance with the city of San Jose heating, ventilating, and air conditioning code, and with the Santa Clara county sheet metal and heating code, is being given by the Sheet Metal, Heating, Refrigeration & Air Conditioning Contractors of Santa Clara County.

Business Manager John H. Dunlea reports the association is represented by code chairman Bill Ehlert of Wm. F. Ehlert Sheet Metal and Henry R. Lapachet of Pacific Sheet Metal Shop.

ANOTHER NATIONAL-U.S. SUCCESS STORY

PROMINENT PITTSBURGH BUILDER SWITCHES TO WET HEAT



Jim Ryan, alert member of the Edward M. Ryan team, the builders of Pennsylvania's 1958 American Home Magazine's "Citation Home".

Edward M. Ryan says it's "Necessary" for Split Levels

Pittsburgh, Pa.—Edward M. Ryan, largest builder of homes in the Pittsburgh area, has adopted a new policy: from now on, his split level homes are going to be heated with hot water systems. Ryan, who started about 460 homes in 1958, anticipates about 10% increase in the number of his starts this year.

"We've tried every method for heating our houses," Mr. Ryan says, "and we've come to the conclusion that it's necessary to use hot water heating in order to keep all levels comfortable."

Contractor W. J. Kumpf hooks up the National-U.S. "11-B" Series cast iron boiler in three-level house built by Edward M. Ryan in Pittsburgh.

Ryan-built homes range upward from $15,000 in price and Mr. Ryan claims he has no trouble at all in convincing prospects that they should pay a few extra dollars for a quality heating system. Boilers used are the popular "11-B" Series cast iron units made by National-U. S. Radiator Corporation, and heat distribution is done via National-U.S. Art Comfortline Baseboard.

Game room of residence of Edward Moritz is built on concrete slab, stays comfortable with this National-U. S. Art Comfortline Baseboard.

"We save a lot of installation time by standardizing on the "11-B" Series boiler and Art Comfortline Baseboard" says Bill Kumpf, of Wm. J. Kumpf & Son, plumbing and heating contractor for Ryan homes. "And we don't have a lot of service calls after the owners have moved in. We just don't seem to have much trouble with National-U. S. equipment." The Kumpf firm is currently installing the plumbing and heating in 50 homes now being built by Ryan in the Berkshire Village Plan, a new suburban development located about twelve miles south of the city of Pittsburgh.

Kumpf shows how the cover of the Art Comfortline Baseboard is extended the length of the wall, even though less radiation than this is needed.

For full information on all National-U.S. heating or air conditioning products, see our listing in the Yellow Pages of your phone book, or write:

National-U.S. Radiator CORPORATION
HEATING AND AIR CONDITIONING DIVISION
Johnstown, Pennsylvania

1958 Detroit Air Conditioning Sales

Cool Summer, Recession Cut Total Installations by 1/3; Ten More Contractors Share Lower Volume

DETROIT — A cool summer combined with sharply reduced business activity accompanying the recession-hit automobile industry hurt air conditioning sales here in 1958.

Total number of units installed dropped one third from the 1957 installations, while installed horsepower dropped 19%, it was found by AIR CONDITIONING, HEATING & REFRIGERATION NEWS in a check of permits issued by the city's Department of Building and Safety Engineering.

Even though installations dropped, the number of contractors securing permits for air conditioning installations in Detroit rose to 132 from the 122 recorded last year.

Residential installations, which have been slowly advancing in recent years, were sharply curtailed in 1958. Only 177 residential installations were recorded in 1958, against the 317 marked up in 1957.

Reinforcing the theory of J. R. O'Mahoney of Westinghouse

* * *

Sales by Contractors

Contractor	No. Units	Hp.
1	130	626.25
2	75	780
3	70	549
4	64	270
5	53	258.5
6	43	335
7	37	105.5
8	37	104.75
9	32	235.5
10	32	199.4
11	30	126
12	30	115
13	29	185.5
14	29	125.25
15	27	71
16	26	89
17	25	101.75
18	24	162.50
19	23	213
20	20	72
21	17	75.50
22	16	65
23	15	96
24	14	54.50
25	14	37
26	13	94
27	12	50
28	12	25.50
29	11	110.50
30	11	40
31	11	65
32	11	36
33	10	41.50
34	10	57
35	10	29
36	9	47.50
37	9	28.50
38	9	52.50
39	9	29.50
40	8	45.50
41	7	41
42	7	31
43	7	17.75
44	7	29
45	6	41.50
46	6	34
47	6	23
48	6	18
49	6	11
50	5	60
51	5	23
52-59	4 at 4 for	157.25
60-71	11 at 3 for	234.25
72-94	23 at 2 for	449.50
95-132	38 at 1 for	551.55
Total	**1,297**	**9,617**

*Sales by Unit Sizes**

Hp.	No. of Units
Under 3 hp.	283
3 hp.	309
5 hp.	365
7½ hp.	190
10 hp.	76
15 hp.	27
Over 15 hp.	47
Total	**1,297**

* This year permits noted installation of "odd size units," i.e., 2.3 hp., 4 hp., 6.8 hp., etc. In the above table such units have been included with the nearest regular size units.

Installations by Type of Establishment

	1958		1957	
	Units	Hp.	Units	Hp.
Retail Establishments				
Food & Drug Stores	54	385.5	95	557.5
Eating & Drinking places	98	656.3	148	740.0
Personal & Repair Services	71	333.5	144	897.0
Other Retail	72	465.5	161	950.0
Other Commercial Establishments				
Offices	305	3,802.3	508	3,587.5
Hotels & Motels	25	164.5	40	470.0
Institutions	154	1,296.0	162	1,870.0
Other Commercial	28	158.0	10	43.0
Unspecified Commercial	258	864.2	273	1,268.0
Industrial Establishments	55	901.5	93	340.0
Residences	177	589.2	387	1,195.0
Totals	1,297	9,617.0	1,971	11,918.0

FIELD SERVICE REPRESENTATIVE

Family man preferred. Age 25-35. Willing to relocate and travel. Minimum qualifications 6 years commercial refrigeration experience and educational background. Excellent working conditions and employee benefits.

Send complete resume:

Personnel Department
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NILES, MICHIGAN

easy to handle!
UNION CARBIDE
Ucon
fluorocarbons
Easy and Safe to Carry
Ring-top provides a solid, generous hand-hold—more than 4" to grip, reducing risk of cylinder damage or personal danger. No more hunting for separate carrying devices!

that air conditioning sales are tied to construction volume (NEWS, Jan. 26, 1959), the 33% drop in air conditioning installations in Detroit during 1958 closely paralleled the 29% decline in construction volume in Detroit as recorded by the Department of Building and Safety Engineering.

A breakdown of the data supplied by the department, shows that non-residential construction was off 35% while residential volume declined 11%.

The accompanying charts provide information taken from refrigeration permits issued by the City of Detroit tabulated four ways. They are: Sales by Unit Size; Sales by Make; Sales by Contractor; and Sales by Type of Establishment.

In total, 1,297 air conditioning units totaling 9,617 hp. were installed in Detroit during 1958. This compares with 1,971 units totaling 11,918 hp. installed in 1957. Largest installation was 2,000 tons in the form of two 800-hp. units and one 400-hp. unit, installed in an office building.

Five horsepower units were installed more frequently than any other size unit, totaling 365 installations. A total of 309 3-hp. units and 282 units under 3 hp. were installed.

The used air conditioner market made its first appearance in the statistics with 45 used units totaling 512½ hp. being included in the tabulations. Also compiled for the first time was a rundown of remote and self-contained units.

Of the 177 residential installations, 44 were split systems, while 162 split systems were installed in commercial and industrial establishments. Perhaps of some interest is the fact that 103 of the remote commercial installations were of the residential type, that is 5 hp. or less.

As in past years, leading contractors and distributors felt that the city of Detroit installations represent from one-half to two-thirds of the total metropolitan area installations.

Even though business was down, some of the contractors increased their business. One reports that his business was up about 5% over 1957.

Sales by Makes

Make	Units	Hp.
1	153	1,372.75
2	133	1,250.83
3	123	615.5
4	114	691.50
5	109	842
6	100	402.75
7	73	294.75
8	38	96.33
9	25	122
10	25	80
11	22	425.80
12	18	40.15
13	17	2,145
14	16	172.50
15	15	85
16	12	83.40
17	12	83.25
18	11	23
19	10	34
20	10	71.33
21	9	85.50
22	8	38
23	7	16
24	7	28
25	7	10
26	7	24
27	7	38
28	5	15
29	4	18.50
30	4	11
31	4	3.75
32	3	13
33	3	35
34	3	10
35	3	6.75
36	2	8
37	2	4
38	2	5
39	2	10
40	2	4.75
41	2	3
42	2	80
43	2	4
44	1	1.5
45	1	2
46	1	3
47	1	2
48	1	3
49	1	5
50	1	3
51	1	20
52	1	50
53	1	1.75
54	1	5
Unspecified	151	108.39
Total	1,297	9,617

Arkla Conducting Gas Air Conditioning Classes During 1959

EVANSVILLE, Ind. — Arkla Air Conditioning Corp. has planned a series of gas air conditioner training schools during the remainder of 1959 covering the subjects of maintenance, service, application engineering, and sales.

Schools concerned with maintenance and service of the "Arkla-Servel Sun Valley" gas air conditioner and the Arkla-Servel 25-ton water chiller will be conducted monthly throughout the year at Arkla's factory here.

The schedule has been designed so that anyone attending the five-day Sun Valley maintenance and service school may remain in Evansville during the following week to attend the water chiller school.

Applications to these classes should be made in writing to the Service Training Dept., Arkla Air Conditioning Corp., Evansville, Ind., and should be received ten working days prior to each session. Registrants should indicate a second choice should the class desired be filled.

Application engineering and sales classes will be held at Arkla's national sales offices in Little Rock, Ark. Registrations for these classes should be made in writing to the Application Engineer Training Dept., Arkla Air Conditioning Corp., 812 Main St., Little Rock, Ark.

Arkla plans four water chiller application engineering schools at Little Rock this year, two in April and one in May and October. Application engineering and sales (small tonnage) classes will be conducted during April, May, June, November, and December.

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exclusive with Ucon BRAND refrigerants

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Made in Five Top-Quality Grades, Ucon Refrigerants 11-12-22-113-114 meet your strictest standards for dryness, purity and economy.

Full Choice of Unit Sizes to match *your* quantity needs. Ucon Refrigerants are sold in 10 and 25 pound Ring-Top Cylinders, in 145 pound and ton cylinders, in 100 and 200 pound drums, and in tank-wagon or tank-car lots.

Prompt, Efficient Delivery from the largest network of distribution points in America serving the refrigeration and air conditioning industries.

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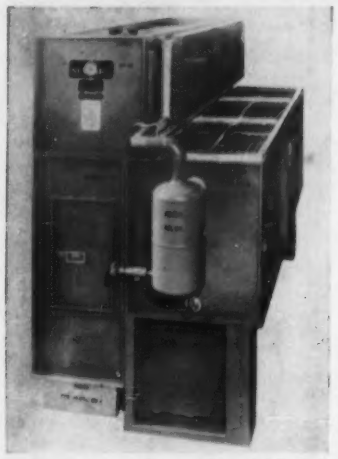
These 5 Ucon Brand Refrigerants will meet your refrigeration and air conditioning needs

Ucon Refrigerant 11 Trichloromonofluoromethane
Ucon Refrigerant 12 Dichlorodifluoromethane
Ucon Refrigerant 22 Monochlorodifluoromethane
Ucon Refrigerant 113 Trichlorotrifluoroethane
Ucon Refrigerant 114 Dichlorotetrafluoroethane

UNION CARBIDE CHEMICALS COMPANY
Division of Union Carbide Corporation

Evap Condenser Components Sized as Line



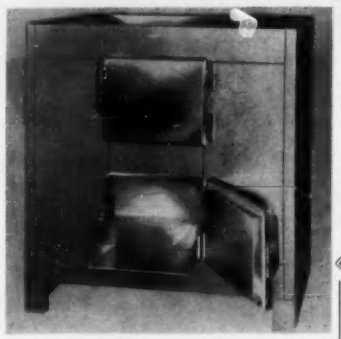
● A new line of refrigerant evaporative condensers applicable to ammonia or halogenated refrigerants has been announced by Niagara Blower Co., Dept. AHRN, 405 Lexington Ave., New York City 17.

"Distinctive feature of the new equipment is that the components, condensing coils, casing sections, and spray equipment are organized and sized as a line of standard units that can be assembled as machines to fit close to the actual capacity needs of an existing refrigeration plant, or make provision for plant expansion directly according to the load requirements," the company said.

"As a result, condensers are available in sizes from 10 to 190 tons' refrigeration capacity in increments of 10 tons in each of the intermediate sizes. From 200 tons to 350 tons there are sizes available at each 25-ton increment, resulting in much economy in the installation.

"These are evaporative condensers, using the evaporation of sprays on condensing coils to remove the heat of condensation at the rate of 1,000 B.t.u. per pound of water evaporated, resulting in hardly more than nominal water consumption."

Only Welded Steel Used In Ice Storage Bins

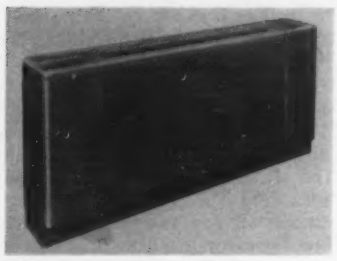


● Featuring all welded steel construction, a line of ice storage bins for automatic ice machines has been introduced by Roy Follett Corp., Dept. AH&RN, 99 Broad St., Phillipsburg, N. J.

Wood as a framing material has been eliminated in the entire line of bins having storage capacities from 250 to 5,000 lbs., it was pointed out.

"By welding steel frames and outer shells into a unitized structure, permanent support is assured for carrying the weight of the ice machine and ice load," the company said.

The steel exteriors are offered in two finishes: polished stainless steel or baked on glossy gray epoxy over "Bonderized" and primed plain steel. All bin liners are welded stainless steel.



Seasonmaker Units Trimmed, Slimmed

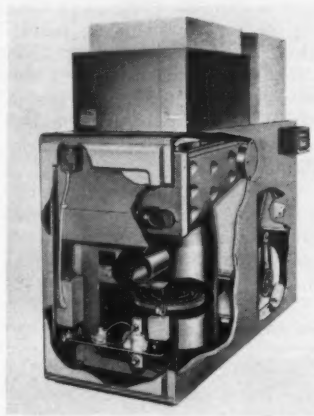
● Complete redesigning of its line of "Seasonmaker" individual room air conditioning units "for modern, compact styling by making them only 8½ in. thin and 25 in. high or deep, was announced by McQuay, Inc., Dept. AH&RN, 1600 Broadway St. N. E., Minneapolis 13.

There are four models of Seasonmakers — ceiling, hideaway, floor, and basic—each in five sizes.

"All Seasonmakers utilize central station heating and cooling with capacities of 220, 330, 440, 520, and 640 c.f.m.," it was pointed out. "The four smaller sizes are equipped with 1,050 r.p.m. motors, while the largest has 1,500 r.p.m. They furnish individual room comfort at any desired temperature level—heated, filtered air in the winter; cooled, dehumidified, and filtered air in the summer.

"All McQuay Seasonmaker models feature reversible coils for easy field change of either right or left hand connections. Cabinet parts are constructed of continuous galvanized steel.

Extras Added to Winter Air Conditioner



● An improved deluxe winter air conditioning unit with several new features is being manufactured by Mueller Climatrol, Div. of Worthington Corp., Dept. AH&RN, 2005 W. Oklahoma Ave., Milwaukee 1.

It is available in models 105-1 (gas) and 202-1 (oil).

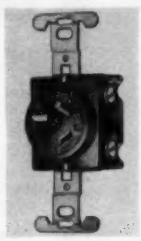
These optional features are offered: "Levelizer" variable input gas valve; variable air flow blower; built-in electronic air cleaner; and clogged filter indicators.

The announcement added: "Summer air conditioning as an integral part of 'Traditional' units, is available with original installation, or it may be added at any time."

Other features listed include a tapered radiator section to provide constant flue gas flow; dimpled radiator sides to give turbulent scrubbing action; cast-iron, individual raised and drilled port type gas burners; thermo-acoustically insulated fan and heat exchanger compartments; and large blowers and motors for quiet air circulation and adequate c.f.m. for cooling.

Polarized Receptacles Fill Cooling Needs

● A line of polarized and grounding devices "to satisfy every need for installation of air conditioning units" is available from Pass & Seymour, Inc., Dept. AHRN, Syracuse 9, N. Y.



Two of the devices offered are the No. 6051 3-wire polarized receptacle (15 amps., 125 volts; 10 amps., 250 volts) and the No. 5661 3-wire grounding receptacle (15 amps., 250 volts). The 6051 is slotted in the crowfoot pattern and the 5661 is tandem-slotted.

They are designed for side or back wiring and are equipped with large binding head screws. Back wiring is accomplished by inserting wires in the holes and tightening binding screws. There is a strip gauge on the back of each receptable. Each is of modern design with a compact, square body.

A Cleaner, Drier System, AND Quick, Profitable Service . . .

Kinney® FEATURES TWO NEW PORTABLE HIGH VACUUM PUMPS

KINNEY KC-3R and KC-8R Portable High Vacuum Pumps are proving important money-makers for servicing Freon Refrigeration and Air Conditioning Systems up to 10 ton size. These gas-ballasted KINNEY Pumps leak test, evacuate and dehydrate the system *quickly*. They're built for rugged day-in-and-day-out service and, being portable, are always ready . . . in the shop or out on the job. Get the advantages of these KINNEY Pumps for your service operations — write for prices today.

Write for FREE Catalog Bulletin 4570.1

KINNEY MFG. DIVISION
THE NEW YORK AIR BRAKE COMPANY
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Please send me, without obligation, Bulletin 4570.1 with full information on KC-3R and KC-8R Pumps.

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Company_____

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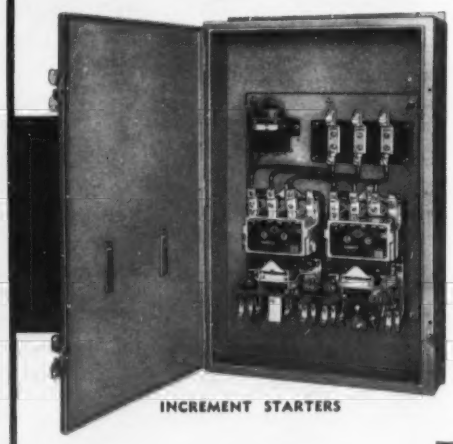
STOP OBJECTIONABLE VOLTAGE DROP!

Choose from a COMPLETE LINE of REDUCED VOLTAGE STARTERS for Air Conditioning and Refrigeration Applications



INCREMENT STARTERS

Specify **FURNAS** for your reduced voltage applications. Only Furnas Electric offers the exclusive "in-between" sizes 1¾ and 2½, plus encapsulated magnet coils, silver-cadmium oxide contacts and non-tracking arc chambers for long uninterrupted service.

INCREMENT STARTERS through 200 hp for part winding motors offer the most economical control for most refrigeration and air conditioning applications. Top quality components for long trouble-free life.

AUTO-TRANSFORMER STARTERS are furnished with closed transition starting as a standard feature, at the same price customers usually pay for open transition starting. You get more starter for your money.

AUTO-TRANSFORMER STARTERS

PRIMARY RESISTANCE TYPE STARTERS provide smooth acceleration, closed transition and high starting power factor. Designed for rugged use, they contain silver-cadmium oxide contacts, non-tracking arc chambers, tamper-proof thermal overload relays, and encapsulated magnet coils.

For more information, write Furnas Electric Co., 1111 McKee Street, Batavia, Illinois

A62

FURNAS ELECTRIC COMPANY
BATAVIA, ILLINOIS
SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES

Draft Hood Design Lowers Boiler Height

● A complete line of gas-fired boilers for residential, commercial, industrial, and farm use, and incorporating new design features, is being offered by H. C. Little Burner Co., Inc., Dept. AH&RN, Dubois and Woodland Ave., San Rafael, Calif.

"A draft hood with a new vertical to horizontal design reduces over-all height of the boiler and permits basement installation with 6-ft. ceiling," the company said.

"A new, aluminized steel flue-collector resists corrosion from all gases. It is tightly sealed in a cement-filled groove to prevent leakage of combustion products into the housing.

"Patented staggered fins on sides of sections present maximum heating surface area to the action of the hot flue gases that are baffled back and forth and sideways in a swirling motion that scrubs every square inch of heating surface."

Skuttle Bows Electric Atomizing Humidifier

● A new type electric atomizing humidifier, which features portable and permanently installed models, has been introduced by Skuttle Mfg. Co., Dept. AH&RN, Milford, Mich.

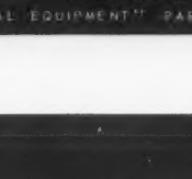
"All units of the new line operate on an aerosol principle, which is the atomizing of water in the form of aerated minute particles by cold mechanical centrifugal ejection of dry mist into the air stream," it was explained.

Model 504 (illustrated) is a portable, plug-in unit, with an atomizing capacity of 1½ to 1¾ pints of water per hour, and is for applications up to 12,000 cu. ft., the company said.

Model 2001 is designed for plenum installation in any warm air heating system. It has a reservoir capacity of over a half gallon of water and will maintain the relative humidity at 35-45% in homes up to 30,000 cu. ft., even when outside temperatures go below zero, the manufacturer claims. Stressing ease of cleaning, the company said the entire unit can be disassembled outside the plenum by hand.

Model 3001 and 6000 are designed for commercial and industrial applications. Model 3001 claims a capacity of over 1 gal. of water per hour, while the model 6000 is said to have an output capacity of over 2 gals. of water per hour.

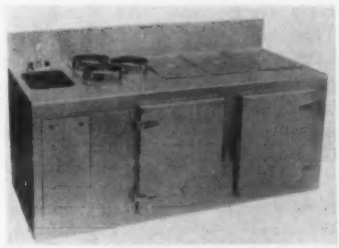
NEW Carrier "CANT-CLOG"* SPRAY NOZZLE



Revolutionary new self-cleaning spray nozzle reduces maintenance and maintains high system capacity. Ideal for original equipment or replacement on cooling towers, air washers, spray-coil units, etc. Low in cost. Installed in seconds. Available as replacement caps, or complete nozzles. For ratings and information, write Carrier Corporation, Syracuse, New York. * Patent Pending

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

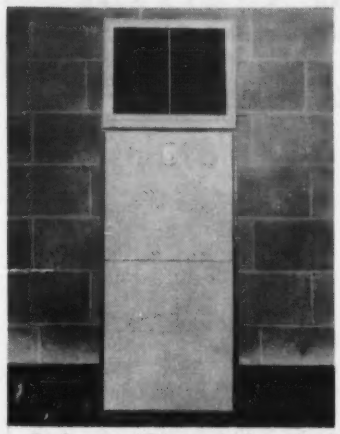


Clam and Oyster Bar Refrigerates Seafood

● A clam and oyster bar for storing, serving, and preparing of fast seafood specialties has been announced by S. & R. Soda Fountain Mfg. Co., Inc., Dept. AH&RN, 550 Trinity Ave., New York City 55.

The unit is 72 in. by 31 in. (special orders on request) and contains a one-piece deepdrawn stainless steel sink bowl with mechanical drain and combination faucet; three #200 pans with covers, 6 in. deep; two stainless steel insulated doors; and two automatic lights.

Vertical Air Handler Rated at 56,000 Btuh



● A new "Rheemaire" vertical air handler for the smaller commercial establishment is being offered by Rheem Mfg. Co., Dept. AH&RN, 7600 South Kedzie Ave., Chicago 52.

Designed for use with the Rheemaire model RB-57 condensing unit, the vertical air handler is capacity-rated at 56,000 B.t.u.h.

The metal cabinet encloses the cooling coil assembly, air circulating blower, and filters. Top-mounted air discharge assembly contains adjustable louvers. The louver assembly is not required for distribution systems using ductwork, the company noted.

The air handler is 25 in. wide and 27 in. deep. "Installation is simplified by the use of precharged refrigerant tubing joining the air handler to the remotely situated Rheemaire condensing unit with its "air-film" condenser, it was stated.

Want More Details?

ADDITIONAL details on products that are described on these pages may be obtained by writing the manufacturer at the address given in each What's New story.

Tell him: "AH&RN sent me!"

"O.E.M. Engineered"...

Products of Refrigeration Research are designed, engineered and built to the exacting requirements specified by the original equipment manufacturers. These same high quality refrigeration supplies are now available through your wholesaler.....look for the Bull Dog seal when you buy.

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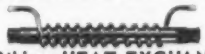
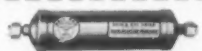


Blue Ribbon HEAT EXCHANGERS... economically priced in sizes from 1/4 through 10 H.P. All copper construction.



Bull Dog *Progressive* Filter-Driers... retain more dirt without danger of plug-up.....retain more moisture because they are filled with pure desiccant - no binders, adhesives or other foreign matter is added. In either Silica Gel or Molecular Sieve.

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Get out of that DILEMMA!

PRIMORE
ROTALOCK and BREAK-AWAY
VALVES
will help you!

ROTALOCK valves are designed for use on compressors, receivers or condensers. The Rotalock can be rotated a full 360° allowing the valve to be positioned in direction of tubing. Eliminates short or compound bends. The flexibility, simplicity and economy of Rotalock makes for fewer bills of material, easier ordering and smaller inventory.

Rotalock valves feature the highly effective Teflon Fiber Seal for more positive sealing at all times.

Seal may be used over and over without affecting its sealing properties.

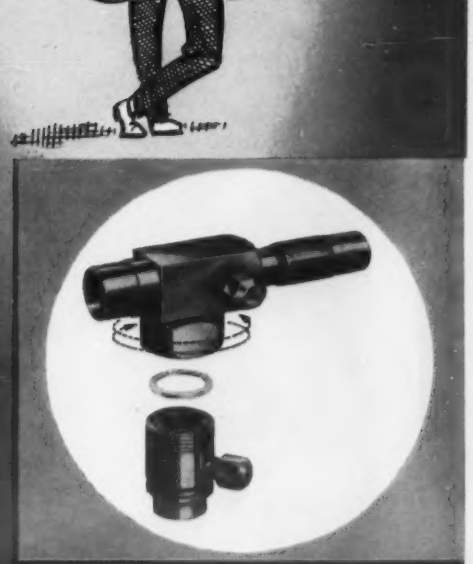
Connector Sizes: ⅜, ½, ⅝, ⅞, 1⅛ and 1⅜ in.

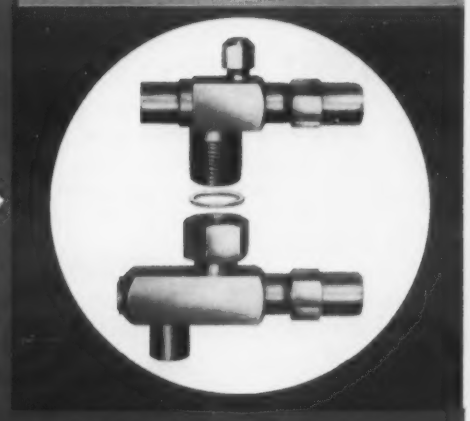
BREAK-AWAY valves assure a fast, positive connection of tubing from evaporator to condenser unit. Evaporator, condenser and interlocking tubing can be completely precharged, eliminating all field installation problems.

Straight and angle, sweat or flare, adapters available if pre-charged tubing is not desired.

All couplings feature a Teflon Fiber Seal for best sealing qualities available.

Connector Sizes: ⅜, ½, ⅝, ⅞, ⅞ and 1⅛ in.





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Over 15 years of Research, Designing and Manufacturing of quality valves.

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TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

Mathematical Disagreement— Thermoelectric Calculations

Who is right—the Russians or Westinghouse?

The question is raised by scholarly followers of recent discussions of thermoelectric refrigeration and refers specifically to mathematics used in determining Figure of Merit. Figure of Merit was defined as **a calculated value which denotes the thermoelectric efficiency of materials** in the NEWS' "Introduction to Thermoelectric Refrigeration" (Reprints available, 50 cents).

Discussion in the "Introduction" brought out that those companies studying and developing thermoelectric cooling jealously guard information relative to the Figures of Merit each attains with its semiconductor materials.

Westinghouse speaks of Figures of Merit on the order of 0.095–0.15. The Russian authority, A. F. Ioffe, expresses his results as

1.5×10^{-3} to 3×10^{-3} $°K^{-1}$

Frequently this designation is offered as 0.0015 to 0.003, which is more familiar to laymen.

To the uninitiated, a first glance at these figures would indicate that we have developed far better thermoelectric materials than have the Russians. This is not true.

The apparent discrepancy lies in the fact that Westinghouse has chosen to develop its own algebraic expression for Figure of Merit.

Questioned by the NEWS on reasons for such a decision, a Westinghouse spokesman stated, "We feel our expression is somewhat more convenient, both in calculation and in end use. While we must admit that majority opinion is against a new expression like ours, our position is that thermoelectric theory and practice are in enough of a state of flux to leave room for such differences. At some point, we will reach international agreement; whether it will be along the line we suggest remains to be seen."

Critics of Westinghouse's choice of an alternate algebraic expression for Figure of Merit point out, "There already is, in effect, international agreement to use Ioffe's expression. The overwhelming majority of the world's literature on the subject uses the Russian definition of Figure of Merit, and this is true even in this country."

"Additional or alternate expressions merely add unnecessary confusion. I suspect commercial vanity, rather than mathematical convenience, is the chief reason for Westinghouse's position," offers another critic.

Actually, the Russian and Westinghouse expressions are equivalent. That is, a simple calculation will convert a Westinghouse Figure of Merit into a Ioffe figure, and vice versa.

Here is Ioffe's algebraic expression for Figure of Merit, **z**:

$$z = \frac{a^2\sigma}{k} \quad (\sigma \text{ is sigma})$$

where **a** = thermoelectric power in microvolts/° C,
sigma = electrical conductivity, and **k** = thermal conductivity.

In this expression, **z** has the dimension **degrees Kelvin.**

In the Westinghouse expression, **m** stands for Figure of Merit:

$$m = \frac{T_c}{4} \times \frac{\theta^2}{\rho k} \quad (\theta \text{ is theta}) \quad (\rho \text{ is rho})$$

where **T—sub—c** = absolute temperature of the cold junction in °K
theta = thermoelectric power in microvolts/°C
rho = electrical resistivity, and
k = thermal conductivity.

m in this expression is dimensionless.

This dimensionlessness of **m** is cited as one advantage of the Westinghouse expression, and one authority predicts that if anything other than Ioffe's expression becomes universal, it will be one which results in a dimensionless Figure of Merit.

Comparing the two expressions, it is seen that Westinghouse's **theta** is the same as Ioffe's **a.**

Ioffe uses **sigma** in the numerator to denote electrical **conductivity;** Westinghouse uses **rho** in the denominator to denote electrical **resistivity** which is mathematically the reciprocal of conductivity. Thermal conductivity, **k,** is the same in both expressions.

Standing alone, therefore, the second term in Westinghouse's expression is equal to Ioffe's expression for **z.**

Multiply **z** by **T—sub—c over 4,** and you get the Westinghouse **m.**

Conversely, multiply **m** by **4 over T—sub—c** and you obtain Ioffe's **z.**

Examples:

Find z when m = 0.15, at cold junction of 280° K.

$$z = \frac{4}{T_c} \times m = \frac{4 \times 0.15}{280}$$

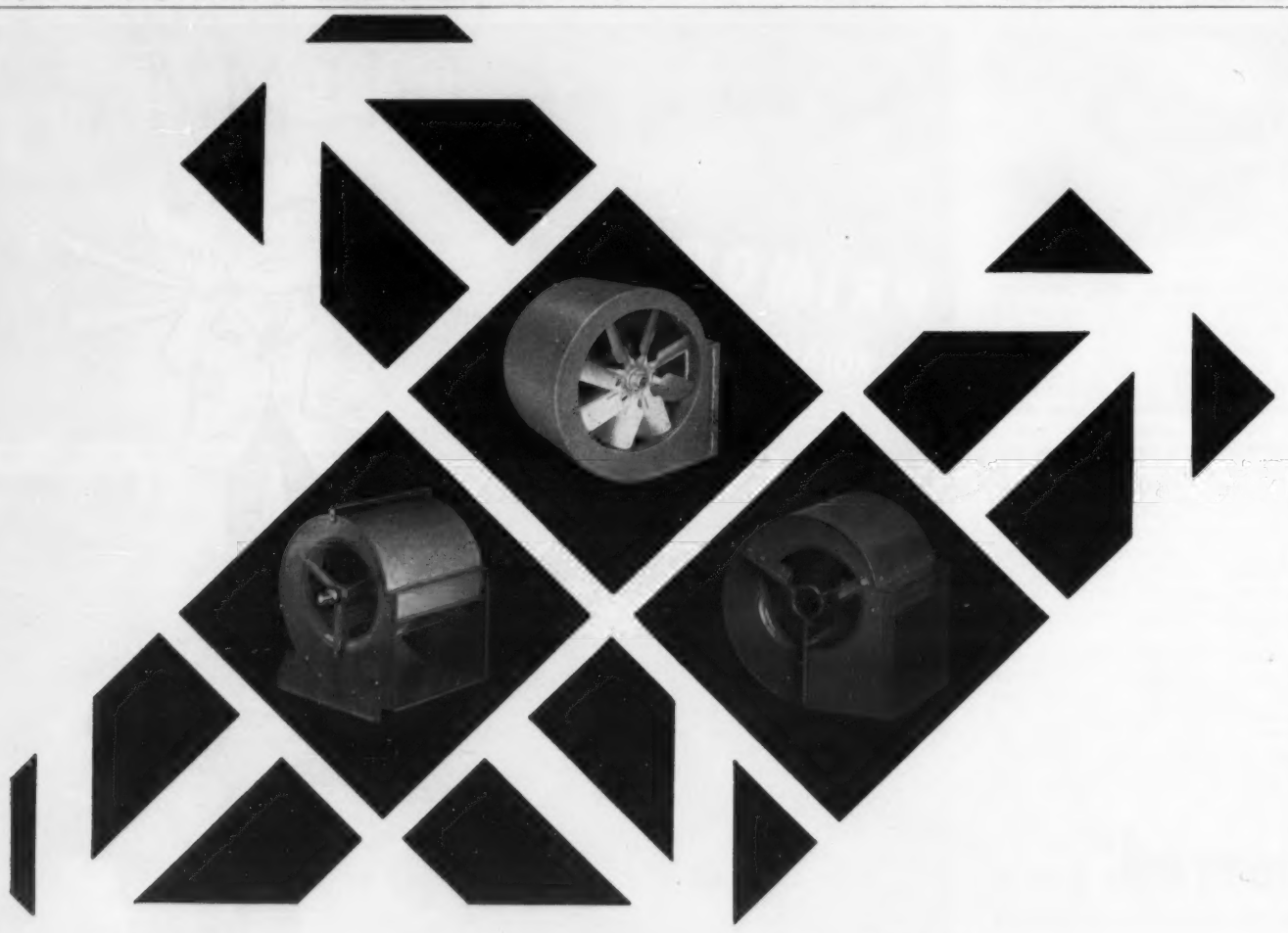
$$= \frac{0.15}{70} = 0.00214 \text{ or } 2.14 \times 10^{-3}$$

Find **m** when $z = 1.5 \times 10^{-3}$ again with cold junction at 280°K.

$$m = \frac{T_c}{4} \times z = \frac{0.0015 \times 280}{4}$$

$$= 0.0015 \times 70 = 0.105$$

It is obvious, therefore, that the Russian and Westinghouse algebraic expressions for Figure of Merit are equivalent. Time and usage will determine whether one of these or some other calculation becomes the standard expression.



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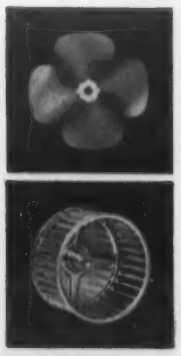
No matter which way the wind blows with your blower unit requirements—belt-driven, direct drive or radial-axial mixed flow—Torrington has the solution to your problems.

This means complete technical data and the proved-out performance rating on three lines of basic blower unit designs.

In addition to the standard direct drive units and the already famous VariBasic belt driven series, latest and most spectacular addition is the exclusive Radiax unit, combining the optimum performance characteristics of both radial and axial flow techniques.

The result is FULL COVERAGE—the best "problem insurance" you could have.
Talk to Torrington!



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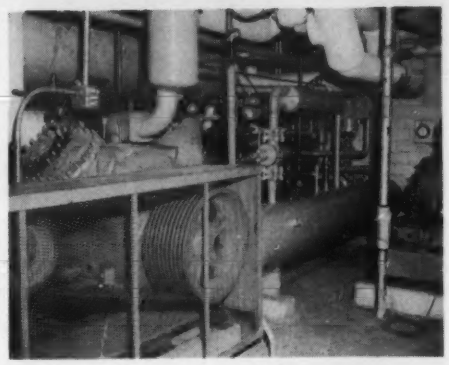
Heat Pump Offers Flexibility, High Degree Of Control In Florida Utility Headquarters



A PORTION of the heat pump equipment located in the basement of the headquarters building of Gulf Power Co., Pensacola, Fla.

PENSACOLA, Fla. — One of the largest heat pump installations in the south is that for the new $1,250,000 headquarters building of Gulf Power Co. here.

The four-story, solar windowed structure is of unusual design, 185 by 300 ft. in size, and is the nerve center for electrical power in the nine-county northwest Florida area.

Principal feature of the heat pump installation is the flexibility and degree of control which has been provided. Heat pump systems control the perimeter of the building while a conventional cooling system serves interior areas.

Two 100-hp. built-in type heat pump systems using outside air as their heat source deliver hot or chilled water to remotely located air conditioning units. Induction type units located under each window around the perimeter of the building, both dehumidify and cool or heat the air being introduced into the work spaces.

These units have coils, supplied with either hot or chilled water from the heat pump, over which pre-conditioned air from a central dehumidifier is blown. Each unit thus maintains comfort in the particular area served and has a thermostatic manually-controlled valve to provide for variations required for individual employe comfort.

The perimeter system is further divided into four zones or areas—east, west, north, and south. In certain seasons of the year and at various times during the day, one side of the building may require less cooling, or heating than another. The zone pumps allow the temperature and humidity to be maintained at comfort levels regardless of outside conditions.

In areas which often have more than normal occupancy, such as the appliance sales room and the demonstration kitchen, separate air conditioning units which operate independently from other units for other building areas have been provided.

Some interior areas of the building require no winter heating and are air conditioned by a 75-hp. conventional type refrigeration system which delivers conditioned air to these areas exclusively.

The compressors, water chillers, and related equipment are located in a large basement equipment room while the air-cooled condensers, air handling equipment, and zone pumps are located in a penthouse above the main building room.

The entire air conditioning installation is automatic and is capable of changing itself from summer to winter operation as required by outside weather conditions.

A control and data collection center is in the basement.

The electrical demands of the building are served from two 12,500-volt feeders which are terminated in underground transformer vaults just outside the rear wall of the building.

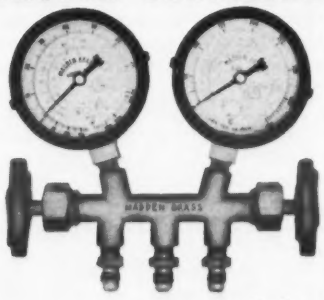
Completely submergible, three-phase transformers (one in each vault) step down the voltage to 277 and 480 volts as contrasted to the normal 120/208-volt systems, and serve the major air conditioning machinery and lighting loads.

Individual 227/480-volt feeders are then run to each floor where distribution panelboards are located.

The air conditioning in the Gulf Power building was designed by the James A. Evans Engineering Co. of Birmingham, Ala., and installed by the Hardy Corp., Birmingham. Kenneth Fulghum of Pensacola was the general contractor and R. N. Pyle of Pensacola the mechanical contractor.

NEW

...FOR EASIER FASTER SERVICING



Pat. Pending

Designed for convenient charging, purging, testing etc., this new compact unit features an all brass forged body, easy-grip hand wheels, Teflon packing and seat for positive shut-off. Equipped with dual scale 2½-inch pressure and compound gauges. Hose connections ¼-inch male flare, gauge connections ⅛-inch female pipe thread.

HANDY HOSE HOLDER

Attaches to back of testing unit so free end of hoses can be conveniently coupled when not in use. Keeps them dry and free from dirt.

SEE YOUR MADDEN WHOLESALER

MADDEN BRASS PRODUCTS COMPANY
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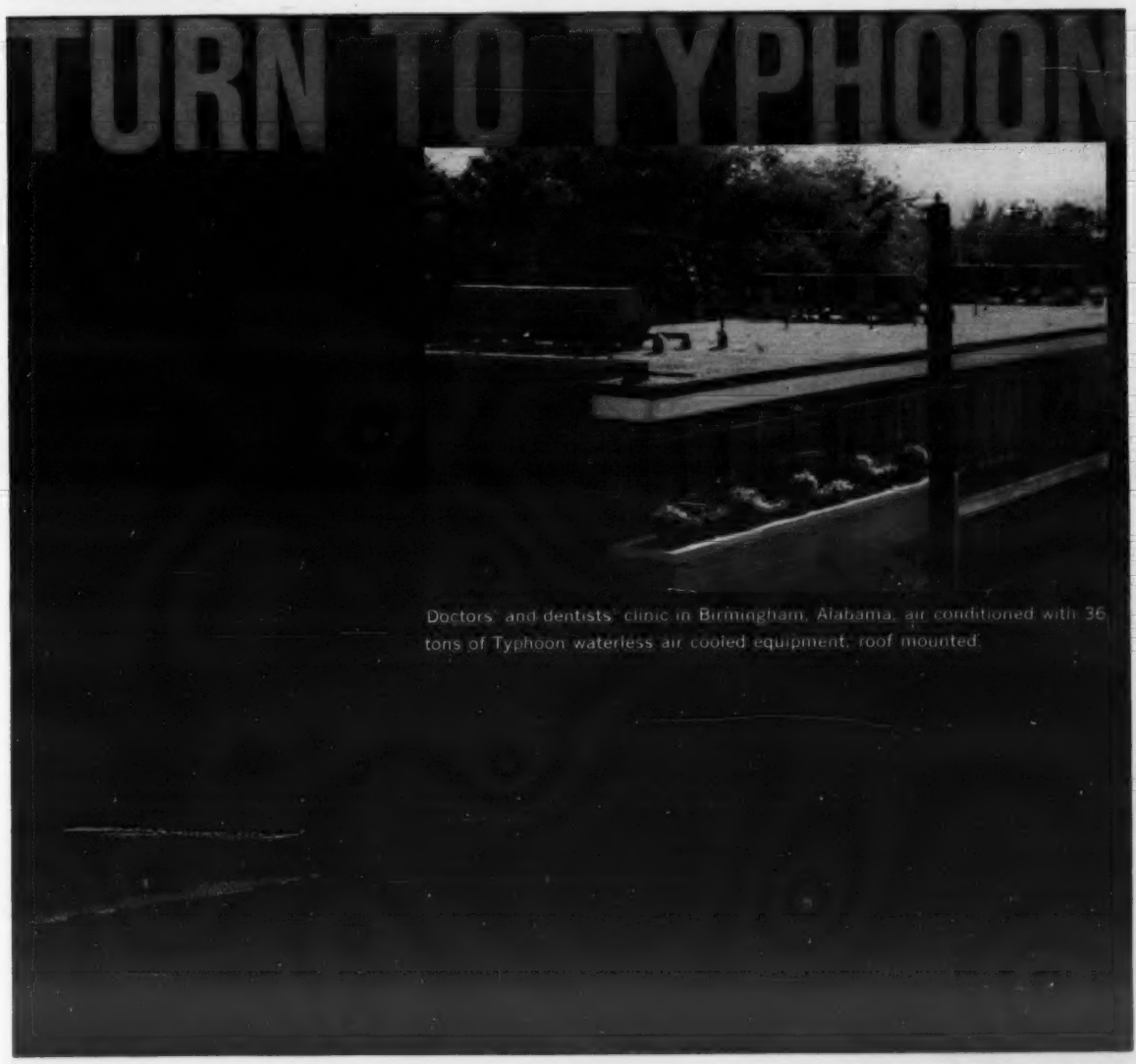

Doctors' and dentists' clinic in Birmingham, Alabama, air conditioned with 36 tons of Typhoon waterless air cooled equipment, roof mounted.

AND HAVE THE RIGHT EQUIPMENT, AT THE RIGHT PRICE, EVERY TIME!

Now you can fill every need, solve any problem with Typhoon's exclusive residential, commercial and industrial equipment! A full range of air cooled units from 2 tons to 20 tons, both packaged and as split systems. Water cooled units from 3 tons to 75 tons. Remote air cooled condensing units to 20 tons, water cooled to 75 tons. Gas and oil fired furnaces in horizontal, vertical upflow and counterflow types. And now, Typhoon's line of compact air-to-air heat pumps will open a new era in air conditioning for you. Each and every unit with built-in Power Reserve—a combination of superior components and oversize parts that insures dependable performance above rated capacity through all weather extremes. All copper condensers in water cooled units, largest coil surfaces and rugged 11 and 14 gauge metal cabinets. Find out how Typhoon quality and flexibility can add to your reputation for getting the job done better, faster, more economically—with more profit for you.

TYPHOON
DIVISION OF HUPP CORPORATION

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90-1

Compressor Rebuilder Serves West

Carsco Expands Facilities, Organizes Production Lines To Keep Pace with In-Warranty Repairs for 11 States

SOUTH EL MONTE, Calif.—Dependable in-warranty repairs and rebuilding for such manufacturers as Airtemp Div., Chrysler Corp.; Day & Night and Payne Divs., Carrier Corp.; Lennox Industries, Inc.; and Air Conditioning Dept., General Electric Co., are the forte of Carsco, factory rebuilders of cycles and compressors located here.

To keep up with increased workload from dealers and distributors in the 11 western states, Carsco has recently expanded to larger quarters, and further expansion has been programmed into operations for 1959.

Sanford H. Benjamin, general manager, states, "For most effective service, we have deliberately restricted ourselves to working with a limited number of manufacturers. Thus, we can provide fast and dependable workmanship on the rebuilding and repairing of accessible hermetic compressors used in packaged air conditioners, on hermetic compressors from 1½ to 5 hp., and on refrigeration cycles, including high sides, heat pumps, and self-contained units —in those cases where the manufacturer instructs his dealer to remove the entire system or a major portion of it for repair at a depot."

The new 11,000-sq. ft. building at 9751 Klingerman St. contains a laboratory and classroom in addition to a shop "laid out for efficient flow of material from incoming to shipping."

Path of Cycle Described

An incoming refrigeration cycle is uncrated and an initial visual inspection is made; instruments are used to check out components like the compressor.

Inspection and testing, together with the original field engineer's report, supply a fairly complete case history.

"If the compressor is faulty," explained Benjamin, "it is removed and replaced. If a motor burnout has occurred, the coils are flushed in accordance with G-E's regulation coil flushing process.

TOP—Complete refrigeration cycles, like these two G-E units, are routed along a different repair line than compressors.

BOTTOM—Completely rebuilt and refinished, these compressors are ready for shipping.

"Brazing of lines, where necessary, is done with dry nitrogen or natural gas flowing through the lines.

"All electrical components are checked for free operation. Contactors are replaced, for instance, if points are dirty or worn, or if action is sluggish. Missing components are replaced, then manufacturers' instructions for 'up-grading' the unit are carried out. After a leak test with an electronic detector, the cycle is ready for a test run on a specially designed test stand."

This test stand is designed to simulate and obtain performance data on a variety of systems—water or air cooled, compressor/evaporator, compressor/condensing unit, or complete cycle.

"Simply changing piping through hand valves, we can use the coils as condensers or evaporators. Air flow can be adjusted to proper c.f.m. through damper regulation. During a test run, readings such as discharge and suction pressures, amp draw, volts, watts are simultaneously available and are recorded," explained Benjamin.

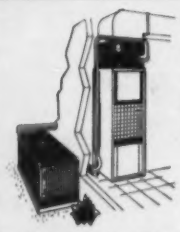
"If the cycle is a split unit, it is evacuated on the test stand and test run before being put on final evacuation. Finally it receives a holding charge of appropriate refrigerant.

"If the cycle is a complete unit, it is evacuated and

BEFORE YOU BUY AND INSTALL AN AIR CONDITIONING SYSTEM

use this practical guide to Quality!

Make sure the Air Conditioning systems you install include these Quality and Performance features



QUIET!

SAVES SPACE

By installing the Rheemaire condensing unit containing all mechanical parts, outside—operating noise is eliminated. Cooling coils fit compactly on top of furnace. The Rheemaire takes no usable space.

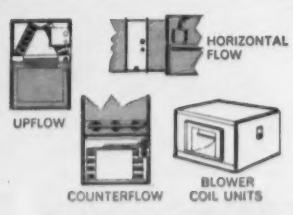
TESTED UNDER ACTUAL OPERATING CONDITIONS

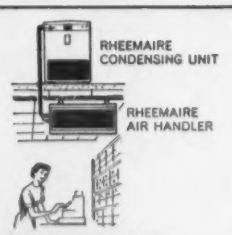
To assure trouble free operation, every Rheemaire unit is given an operating test to assure dependable performance according to rigid specifications. Such important factors as blower speed, compressor operating pressures and power consumption are all recorded.

CERTIFIED TO COMPLY WITH ARI STANDARD 210

CERTIFICATION APPLIES ONLY WHEN USED WITH PROPER COMPONENTS AS DESIGNATED BY MANUFACTURER.

To provide the highest possible standards in quality and performance, Rheem is an active participant in the air conditioning certification program administered by the Air Conditioning and Refrigeration Institute. Every Rheemaire unit carries a 5 year warranty.





ADAPTABILITY TO ANY TYPE INSTALLATION

RESIDENTIAL. Rheemaire can be installed anywhere with any type heating system. There are 8 Rheemaire models from 22,000 B.T.U. to 75,000 B.T.U. capacity.

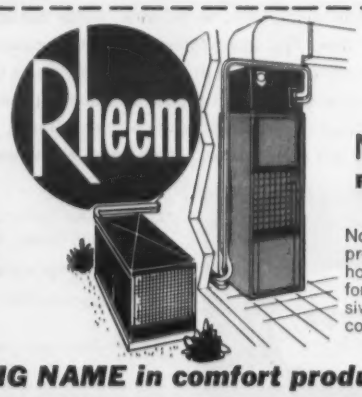
COMMERCIAL. The quiet, efficient Rheemaire air handlers, available in both horizontal and vertical models, offer many versatile commercial applications.

AND MOST IMPORTANT... OPERATING ECONOMY

The patented, exclusive Rheemaire condenser provides the operating economy that saves homeowners and store owners up to 40% in operating costs each month. Compare this with the operating costs of other units and you'll buy and install Rheemaire.

QUALITY IS GOOD BUSINESS

Satisfied customers mean an end to profit killing call backs and replacement. Quality materials and skilled workmanship mean an end to costly adjustments and repairs. Rheem is known the world over for the performance and quality leadership that assures satisfaction. That's why more and more Rheemaire air conditioning systems are being installed every day.



NEW!

RHEEM AUTO-BALANCE SYSTEM!

Now it's easy and inexpensive to provide zoned comfort in any style home. Ask your Rheem wholesaler for a demonstration of this exclusive Rheem development in home comfort.

You can rely on Rheem... the BIG NAME in comfort products for the home

RHEEM MANUFACTURING CO., HOME PRODUCTS DIVISION, DEPT. NA. 7600 S. KEDZIE, CHICAGO, ILL., SOUTH GATE, CALIF., DALLAS, TEXAS, SPARROWS POINT, MD.

"BUY FROM FABRIKANT"

Lowest prices for imported copper, brass, aluminum sheets, coils, manufactured strictly to ASTM and Federal specs. Large stocks all gauges and sizes on hand New York warehouse.

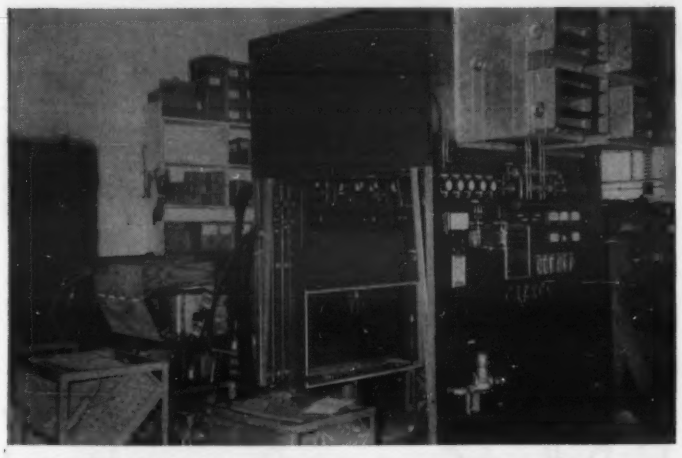
Orders also solicited for forward shipments.

Stocklist and prices upon request.

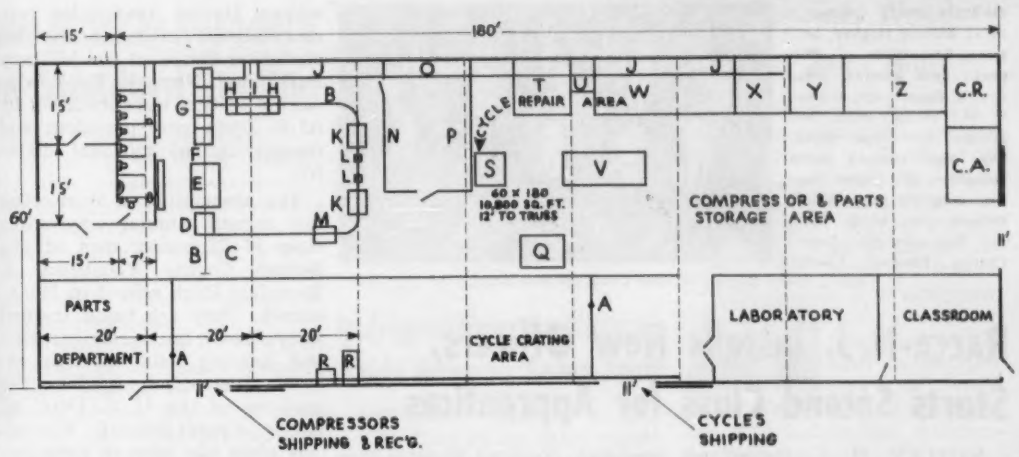
FABRIKANT METALS CORP.

620 Fifth Ave. • New York 20, N.Y.

SERVING THE METAL INDUSTRY FOR OVER A QUARTER OF A CENTURY



CARSCO TEST STAND which allows performance testing of all components or complete cycles. All necessary readings are available simultaneously.



SHOP LAYOUT shows how production lines are organized. Legend: A—Overhead crane. B—Overhead monorail. C—Area for Walcott Lathe and hermetic grinder. D—Tear down stand for semi-hermetic compressors. E—Tear down benches. F—Press. G—Degreasing and cleaning tanks. H—Neutralizing tanks. I—Final cleanup bench. J—Permanent work bench and tool, parts storage. K—Assembly stands for semi-hermetic compressors. M—Leak test tank. N—Stator rewinding section. O—Hermetic compressor assembly. P—Hermetic compressor test panel. Q—Paint spray booth. R—Bake oven and evacuation. S—Refrigeration cycle test stand. T—Leak test. U—Oil charge. V—Evacuation. W—Repair and rebuilding, replace compressor. X—Heat lamps. Y—Steam clean. Z—Flushing areas for coils. C.R.—Compressor removal. C.A.—Analysis.

charged, then run through the test stand.

"After leaving this point, the unit is made to look as new as possible; coil fins are straightened, final cleanup and painting takes place, and the cycle is crated."

Path of Compressor

Hermetic compressors, either from units or separate, are given preliminary tests to determine status of motor. Oil is drained off, and the compressor is mounted on a Walcott lathe and cut open.

The disassembled compressor parts are cleaned by immersion into hot alkali for 20 minutes, rinse, acid tank, rinse, then neutralizer. "This insures clean parts even after the most severe burnout."

Parts are replaced as needed and compressor is assembled in a room in which humidity and temperature are accurately controlled.

The assembled compressor is subjected to a series of performance and quality tests, including a 300 p.s.i. immersion test for leaks.

If motor stators need rewinding, the operation is performed in a relatively dust-free room. Triple coats of magnet wire enamel like "Lecton" or "Acrylex" are used. Then the stator is dipped into a compatible varnish for 10-15 minutes. After draining, the unit is baked for 5 hours at 290-300°.

Twin test stands for semi-hermetics allow test running of two units at the same time. Each discharge valve in the multi-cylinder jobs is tested and any defective valves are replaced before further testing is done.

Total effect of repair stations like Carsco, according to the company, is "to relieve the manufacturer of all handling costs on the West Coast through our receiving, storing, and shipping of all his replacement needs."

Handy Tube Bender

Smoothly Bends any pipe or Tubing ⅜"-1⅛" O.D.

• Just a twist of the wrist assures perfect, even bends — right angle, any angle, U and offset. Save enough on ONE job to pay for your HANDY BENDER.

See your supply house—or write for free folder today.

HOLSCLAW BROS., INC.

428 N. Willow Road • Evansville, Indiana

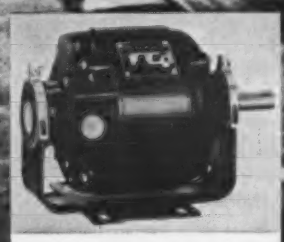
Here Timing Counts . . .

The pitch is on the way; from here on in, the batter's timing really counts! And when it's *your* turn at bat to solve a motor-drive problem for appliances or equipment, Emerson-Electric will work with you to make your timing *perfect!*

Remember . . .

• Emerson-Electric produces *custom-engineered* motors to suit *your specific needs.*

• We specialize in solving motor-drive problems *like yours,* and we have a back-log of more than 65 years of experience.



To get the kind of timing that pays off in the profit column, call, wire or write Dept. M-357 today. The Emerson Electric Mfg. Co., St. Louis 21, Mo.

EMERSON-ELECTRIC *of St. Louis • Since 1890*

GARDEN STATE (Seated l. to r.) Richard Hughes, sec.-treas.; Bernard Hassan, vice-pres.; Saul Marder, pres.; Ray L. Eggert, sgt.-at-arms; F. H. Young, exec. sec. Middle row: Edgar Donohue, legal counsel; James Naughton, dir.; Ingvar Monsen, outgoing pres.; Daniel DeSesa, dir.; Al G. Dietl, dir. Top row: John Sanok, Charles Edmond, Chester Karas, Erwin Geiger, William Capo, all directors.

RACCA-N. J. Installs New Officers, Starts Second Class for Apprentices

NUTLEY, N. J.—Recent activities of the Refrigeration & Air Conditioning Contractors Association of New Jersey, Inc. included the installation of new officers at the 11th annual dinner-dance and the opening of new apprentice classes.

New officers are Saul Marder, president; Bernard Hassan, vice president; Richard Hughes, secretary-treasurer; and Ray L. Eggert, sergeant-at-arms. Frederick H. Young was re-elected executive secretary. Retiring President Ingvar R. Monsen was named as a director.

Some 250 persons, including several United Association representatives, attended the installation dinner at the Military Park hotel, Newark. The newly-elected officers were installed by Al G. Dietl, past president and recently-retired national director.

The association is sponsoring the second annual apprentice class of 22 young men at the Bergen County Vocational & Technical High school in Hackensack. They are being trained as craftsmen in the refrigeration and heating field through related instruction under the auspices of the U. S. Dept. of Labor Apprenticeship Bureau. One class has been in existence through the joint program since early last year.

Additional apprenticeships are planned in other cities as facilities are acquired. Apprentices are sponsored by employer members and should be between ages 18 and 24 for indenture.

SUNSHINE STATE (l. to r.) Everett G. Carroll, dir.; Robert S. Lafferty, vice pres.; Robert Hebb, treas.; L. P. Gignac, dir.; Dudley M. Cawthon, pres.; Howard S. Davis, exec. sec.; Sam L. Hamilton, dir.; and J. W. Hendricks, dir.

Florida ACRA Elects Cawthon Pres.; H. Pollard Captures Rooney Award

MIAMI, Fla. — Officers and committee chairmen chosen to direct the Air Conditioning & Refrigerating Association of Florida, Inc. (ACRA) for 1959 are headed by President Dudley M. Cawthon. Others include Robert S. Lafferty, vice president; Robert Hebb, treasurer; L. P. Gignac, Sam L. Hamilton, Harry Billitch, C. R. Cunningham, Everett Carroll, and J. W. Hendricks, directors; Committee Chairmen Armand Cowan, Frank O'Brien, J. V. Shellhorse, Q. P. Carvel, Billitch, and Robert Mitchell.

Howard S. Davis is executive secretary.

The officials were elected and installed at the association's annual banquet and meeting held at the DuPont Plaza hotel.

It was also noted that at a luncheon which coincided with the annual convention of the Associated General Contractors of America at the Americana hotel, the Rooney Award presented annually to an area apprentice judged most outstanding was given to one who received his training in ACRA-sponsored classes.

He is Harry J. Pollard, who won not only this award but has been in the state annual pipefitting contest for the last two years—and won first place each time.

Regarding the Rooney Award, it was explained that Frank J. Rooney, owner of a large contracting firm, has been promoting apprenticeship training throughout the building trades.

In 1957, Rooney started an award program under which each apprenticeship committee from the various building trades (air conditioning, carpenters, lathers, sheet metal roofers, electricians, brick layers, plumbers) would present to a group of judges their outstanding apprentice.

This apprentice is selected from the individual apprenticeship groups by the local apprenticeship committee, with selection based on merit throughout the apprenticeship term. The apprentice, to be eligible, must be in his last year of apprentice training.

Selected apprentices from each trade are interviewed by the board of judges. This group usually consists of the presidents of the local contractors', architects', and engineers' associations.

The awards include a large silver cup and a smaller replica of the cup for the outstanding apprentice, and plaques for the others in the contest. The cup is retained for one year.

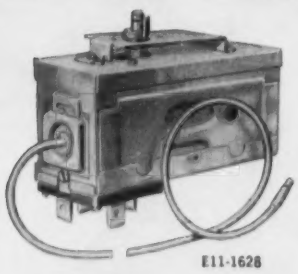
This year, as indicated, the apprentice (Pollard) from the air conditioning, refrigeration, pipefitting, and heating trade was chosen as the outstanding apprentice.

In Controls for New or Replacement Installation . . .

IF IT'S RANCO... IT'S RIGHT

Your choice of more than 5,000 different Ranco Controls assures you of exact fit, reliable performance and long service. More than 100,000,000 Ranco Controls have been proven in use. When the serviceman installs a Ranco Control, it's right . . . to be sure!

Just a few of the many refrigeration and air conditioning applications of Ranco Controls are shown below. Contact your Ranco distributor for more information on controls for new applications or replacement.



E11-1628

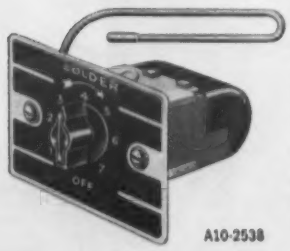
AUTOMATIC DEFROST REPLACEMENT CONTROL

For household refrigerators built to defrost automatically by electric heat or hot gas every 24 hours. Automatically terminates defrost period with "fail-safe" power element or by timer with 45-60 minute running period when defrost is initiated.

010-1418

COMMERCIAL AIR TEMPERATURE CONTROL

Control mounts on any surface or wall to control temperature of the air in an adjustable range of 0° to 45° with adjustable differential. Applications: walk-in and reach-in coolers, florist cabinets, display cases, dry beverage and milk coolers, etc.



A10-2538

FREEZER CONTROL WITH SIGNAL CIRCUIT

Two types of signal operation with signal device on or off continuously until circuit automatically operates device when temperature at bulb raises 8-12° above cut-in setting (because of open door, poor seal, etc.) Adjustable with minimum 8° between —22°F. cold cut-out to 22.5°F. high cut-in.

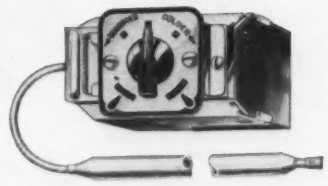
INSTANT REVERSING VALVE

V25 and V26 Solenoid Reversing Valves for heat pump operation of window or unit air conditioners. Reverses refrigerant flow instantly without "off" period as required by thermostat. Capacity (R-22): V25—2½ through 7½ tons; V26—1 through 2 tons.

V25-500

TWO-STAGE OR HEAT PUMP AIR CONDITIONING CONTROL

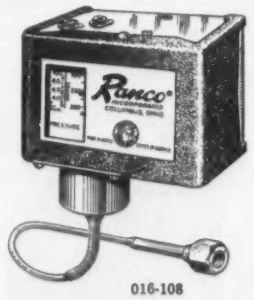
For two-stage cooling or heating, automatic changeover on heat pump applications with heat-cool combination. Two electrically-separate S.P.D.T. switches with quick-connect terminals are operated by one temperature sensitive power element liquid filled to control from bulb.



C17-100

COMMERCIAL HIGH PRESSURE CONTROL

Compressor-mounted control to operate with refrigerants R-12 and R-22. High electrical rating for commercial systems. S.P.D.T. switch will open or close on rise of pressure in various ranges from 5 to 360 psi, has adjustable differential. Available in several temperature ranges from —30° to 105°F.



016-108

GET THIS REPLACEMENT MANUAL!

Ranco Replacement Reference No. 1660 lists nearly 5,000 Ranco replacement control applications. See your Ranco wholesaler for a copy (not available from factory).

More than 100,000,000 Ranco Controls proven in use

Ranco® INCORPORATED

COLUMBUS 1, OHIO

ROSS TEMP INC., recently purchased by Schneider Metal Mfg. Co., Chicago, has announced the appointment of John Seippel as sales manager. Ross Temp manufactures a line of automatic flaked ice machines. Illustrated with Seippel is one of the new 250 units. Prior to joining Ross Temp, Seippel was with Whirlpool Corp., St. Joseph, Mich., where he was in charge of national sales training on all RCA-Whirlpool major appliances. Other positions held by Seippel were Atlantic regional manager of RCA Victor and regional manager of Fedders-Quigan Corp., Chicago.

Sigers Heads Michigan RSES Association

JACKSON, Mich. — William Sigers, Cascade Chapter, was elected president of the Michigan State Association of Refrigeration Service Engineers Society during its 10th annual convention held here recently, it was announced.

William Schrieber, Southwest Chapter, and Henry Smith, Northeast Chapter, were elected educational directors — Schrieber to a 1-year term, Smith for two years.

Other officers and their chapters are first vice president, Eldon Thrash, Motor City; second vice president, Willard Baker, Wolverine; secretary, Robert Milburn, Southwest; treasurer, Don Pierce, Wolverine; and sergeant-at-arms, Ray Jacobs, Cascades.

Rust Heads Acme's New San Francisco Branch

JACKSON, Mich.—Acme Industries, Inc. here has opened a branch office in San Francisco recently.

R. C. Robertson, director of sales, announced that H. J. Rust, Jr. would be manager of the new office and that he would be assisted in the Bay area by A. L. Mudica, sales engineer for the firm.

The office will supervise Acme sales engineers in Washington, Oregon, Colorado, Nevada, Arizona, Utah, Idaho, New Mexico, and Montana as well as California.

IMPROVED HYDŌ HOLLOW CONE SPRAY NOZZLES CAN'T CORRODE

Spraying Starts Below ½ PSI

Injection Molded of "Tenite" (Butyrate)

NOZZLE NO.	IPS	GPM AT 7 PSI	SPRAY ANGLE
H .8	⅛"	.8	90°
H 1.0	¼"	1.15	75°
H 1.9	⅛"	1.8	90°
H 2.5	½"	2.6	100°
H 3	¼"	3.3	75°
H 6	¼"	5.0	85°
H 7	¼"	7.0	100°

AUSTIN MANUFACTURING CORPORATION
305 Perry Brooks Bldg. Austin 1, Texas

Robertson To Direct New Market Research Program for American Standard Cooling

NEW YORK CITY—A new market research program for its nationwide network of warm air heating and air conditioning distributors has been announced by American-Standard Air Conditioning Div.

N. Robertson

Under this program the Air Conditioning Div. has established a Market Research Dept. which will work with distributors "to develop marketing data for individual areas to assist its distributors in achieving their maximum potential."

To supervise the program, the Air Conditioning Div. has appointed Norman Robertson to the newly-created position of market research manager.

According to W. H. Baker, Jr., vice president, marketing, "In his new position, Robertson will develop sales forecasts, conduct research pertaining to specific marketing areas, and direct long-range studies relating to market potentials.

"In other words, we will supply the type of market research usually confined to the national picture of the marketing problems of our individual distributors."

Robertson stated: "The Air Conditioning Div. markets its products through distributors who specialize in warm air heating and air conditioning. Many of our customers, however, have neither the time nor the resources to conduct comprehensive market analyses of their respective trading territories.

"We, therefore, are going to provide them with forecasts of the short term—up to one year and long term—up to five years market for warm air furnaces and year-round air conditioning for both new construction and modernization in their areas."

Robertson has been with American-Standard Air Conditioning Div. since February, 1958, as research analyst.

Refrigeration Appliances Adds Bass to Sales Staff

CHICAGO—Addition of Russell B. Bass to the sales organization of Refrigeration Appliances here was recently announced by Frank Klaas, vice president in charge of sales.

The company manufactures refrigeration and air conditioning equipment under the "Krack" trade name. Bass was formerly sales manager of J. E. Watkins Co., Maywood, Ill.

Frick Appoints Wood Assistant Sales Mgr.

WAYNESBORO, Pa. — Frick Co. has announced the appointment of David J. Wood as an assistant sales manager.

D. J. Wood

His efforts will be primarily devoted to the resale of equipment through franchised connections such as distributors, air conditioning contractors, and dealers, the announcement said.

Wood graduated with a B.S. in mechanical engineering from Fenn college, Cleveland, in 1938. In the succeeding 21 years, with one of the larger manufacturers of the industry, he has engineered and sold all sizes of refrigerating and air conditioning machinery and apparatus.

...REVERE

DRYSEAL

COPPER REFRIGERATION TUBE

It's a dead cinch to bend dead-soft DRYSEAL. Your hands are all you need, even for the most intricate bends. And its ductility and special temper make it extremely easy to flare for compression fittings without danger of splitting.

And to make sure you get a tube that is free of even the slightest trace of dirt or moisture we double crimp DRYSEAL on both ends, at the factory. This is the final step in manufacturing, that immediately follows a special cleaning and dehydrating operation, which keeps dirt and moisture from entering the tube. That's why the inside of DRYSEAL shines like a new penny. This double crimping does not interfere with installation for it is made in such a way that the diameter of the tube does not change, permitting DRYSEAL to be passed through any opening large enough for the tube itself. Economical tube sizes range from ⅛" to ¾" O.D.

Also you'll find the job-size, 50-foot one-coil pack easy to handle, light weight, economical and sturdily made to assure protection of the tube.

COPPER * BRASS 18 01 * REVERE * ALUMINUM

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, N. Y.

• • •

Mills: Rome, N. Y.; Baltimore, Md.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb. Sales Offices in Principal Cities, Distributors Everywhere.

Fundamentals of Air-Moving Systems

(2) How an Air-Moving System Works (Cont.)

By L. C. Linstrom
Air Impeller Div., Torrington Mfg. Co., Torrington, Conn.

Effects of Changes In Impeller Size, Speed

Fortunately, the mismatched condition in Fig. 3 can be readily corrected in order that the impeller and system-resistance curve cross at point C, where static pressure and flow rate are at the desired values. The obvious way to accomplish this would be to select another impeller whose performance curve (dotted line) passes through point C, as shown in Fig. 3. To shift the performance curves, any of the following changes might be made:

1. A different type of impeller or different design of the same type.

2. The same impeller type and size at a different operating speed.

3. The same impeller type and speed with a different size.

The effects of changes in impeller speed and size of flow rate, static pressure, and fan power are related in the well-known Fan Laws, which are constantly used in design by manufacturers of air-moving equipment. *In general, the air flow, static pressure and power required increase and decrease as size and speed increase and decrease.* For any particular air-moving system, for example, air flow rate changes proportionately to speed for the same impeller.

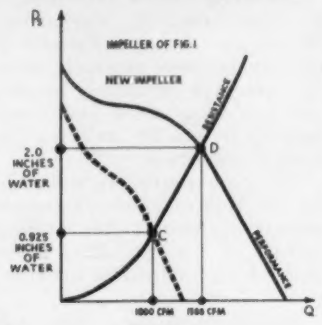


FIGURE 3

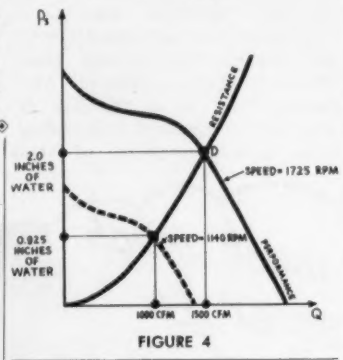


FIGURE 4

Assuming that the impeller whose performance curve (solid) is in Fig. 3 and 4 originally was driven at 1,725 r.p.m., its operation at 1,500 c.f.m. at point D can be reduced to the required 1,000 c.f.m. (within a few c.f.m.) by reducing speed from 1,725 to 1,140 r.p.m. (almost exactly a 3 to 2 ratio).

By applying this Fan Law to the entire performance curve at 1,725 r.p.m., the shrunken curve (dotted) for a speed of 1,140 r.p.m. in Fig. 4 can be drawn. Although this curve is now the same shape, the reduced speed has been selected so that the curve crosses the system-resistance line at the desired 1,000 c.f.m. and .925 in. of water.

Impeller Power, Efficiency

Air horsepower is the rate of total energy that an impeller delivers to an air-moving system and increases proportionately with both static pressure and air flow rate.

The efficiency of an impeller is the percentage of total power input to the impeller from the motor shaft that is converted into useful air horsepower. The air horsepower required in a particular air conditioning, heating, or ventilating installation depends, of course, entirely on the requirements of the system and therefore is not affected by the particular impeller unit used.

Impeller input power, which helps to determine both the size and cost of the motor needed and the operating power required, is very much dependent on the efficiency of the impeller unit. Not only do the efficiencies of different types and particular lines of impellers vary widely, but the efficiency of a specific impeller varies a great deal within its possible performance range.

Therefore, the impeller size and operating speed can very much affect the initial and operating cost of the entire air-moving unit.

(Next: Types of Air Impellers)

WHAT . . WHEN . . WHERE

—A Guide to Coming Events of Interest

Mechanical Contractors of America Convention
April 28-May 1, Shoreham hotel, Washington, D. C.

Oil-Heat Institute of America
April 29-May 4, Olympic hotel, Seattle.

Air-Conditioning & Refrigeration Institute
May 3-6, The Homestead, Hot Springs, Va.

National Heating Wholesalers Meeting
May 10-12, Ambassador hotel, Los Angeles

Industrial Heating Equipment Association Meeting
May 17-20, The Homestead, Hot Springs, Va.

Sheet Metal & Air Conditioning Contractors Annual Convention
May 28-30, Broadmoor hotel, Colorado Springs, Colo.

Institute of Appliance Manufacturers
June 1-3, Netherland-Hilton hotel, Cincinnati.

American Society of Heating, Refrigerating & Air Conditioning Engineers
June 22-24, Lake Placid Club, Lake Placid, N. Y.

DO YOU FIND YOUR PUMP PROBLEM HERE?

A — Water Supply, Air Conditioning, Refrigeration, Cooling Towers, Sump Pumping, Etc.

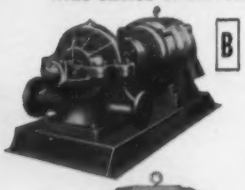
B — Booster Service, Cooling Towers, Water Treatment, Water Circulation, Brine Service, Etc.

C — Hot Water Circulation, Ice Water or Brine, Clear Water Boilers, Booster Service, Etc.

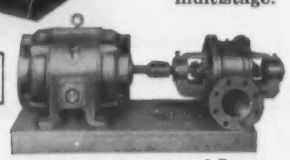
D — Hot and Cold Liquids, Refrigerants, Boiler Feed, Cooling Towers

Then You'll Find Your Best Answer Here—

A — **F-M Pomona Water-Lubricated Turbine Pumps** Easily installed, easy to adjust for varying field conditions. Available with wide choice of drivers.



B — **F-M Split-Case Centrifugal Pumps** Capacities, pressures and sizes for any requirements. Single-stage or multistage.



C — **F-M Westco Peripheral Pumps** Capacities to 200 gpm. Pressures to 900 ft. Sizes 1½" through 2½". Horizontal single-stage or multistage. Develops high pressure at normal operating speeds.

D — **F-M Builtogether Centrifugal Pumps** Capacities to 900 gpm. Pressures to 525 ft. Sizes ¾" through 5". Single-stage or multistage.

FREE! Expert Engineering Help at Your Service

Be *sure* of low-cost, foolproof pumping installations that match your exact requirements... call in your Fairbanks-Morse Sales Engineer. Take advantage of his broad technical background and expert knowledge of pumps for air conditioning, plumbing and heating. Call him today, or write Fairbanks, Morse & Co., 600 So. Michigan Ave., Chicago 5, Illinois.

See Sweet's Product Design Catalog File for complete F-M Pump Line.

FAIRBANKS-MORSE
a name worth remembering when you want the BEST

PUMPS • SCALES • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY
RAIL CARS • HOME WATER SERVICE EQUIPMENT • MAGNETOS

DOES YOUR APPLIANCE CARRY THIS SEAL of QUALITY?

The motor used in this equipment is protected against overloads, low voltage, over-voltage with a Mighty Mite Thermal Protector

MECHANICAL INDUSTRIES PRODUCTION CO.
223 Ash Street • Akron, Ohio

An all-purpose, all-quality thermometer for any and every frozen food cabinet... that's the

MARSH *Universal*
FROZEN FOOD CABINET THERMOMETER

Here is Marsh quality, accuracy and beauty at a moderate price. Small and compact, but with a bold, easy-reading 2½" dial having increased scale divisions in the working range. Accurate to plus or minus one division over entire scale—not affected by ambient temperature.

Its white enamel case with nickel plated ring is an adornment to any cabinet. Note ease of installation pictured above ...also unique ball and socket joint providing adjustment to best reading angle. Thermometer is standard with 5½ feet of nickel plated capillary tubing. Write or, better still,

see your wholesaler

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Thermometers • Gauges • Water Regulators • Solenoid Valves • Heating Specialties

You Asked About It

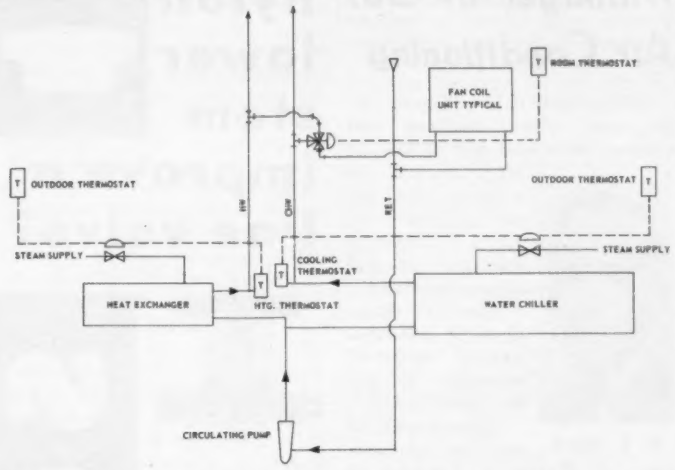

FIG. 1—Diagram which appeared in the Feb. 16 issue of the NEWS and is being questioned by a subscriber.

I have a question relative to a schematic piping layout used in the article on page 15 of the Feb. 16 NEWS. (See Fig. 1.)

Why is a steam line supplying the chiller? as well as the heat exchanger? Also, a valve is shown on each steam line with what appears to be the hand-wheel of each directly above the valves (but no connecting stem shown) and through it passes the dotted line between the outdoor and indoor thermostats. I can see that possibly the valves are pneumatic shut-off valves—the outdoor T on the heating side opening the valve when it anticipates a heating requirement—but would the other outdoor stat, anticipating the call for cooling, go through a steam line control valve to the chiller?

L.D.O.—Sacramento, Calif.

E. Roger Hewitt, designer of the system replies:

1. Steam is being supplied to the water chiller because it is an absorption unit using steam supply at 12-lb. pressure.

2. The valves referred to are pneumatically operated modulating type steam control valves controlled by a compensating indoor-outdoor controller. Powers Regulator Co. is furnishing all controls.

The blending valves used are standard three-way valves, pneumatically controlled to handle the proper quantity of either chilled or warm water. Each valve or group of valves in the same area will be operated by a single action wall type thermostat located within the area.

* * *

Would you please advise us if you have any knowledge of grass freezing having been done in America, and if so would you please advise us of the type of plant which would be required, together with precautions for preparing this product, freezing, and storing of same?

L.S.—Liverpool, England

Readers with any knowledge of this general subject are invited to send in their comments.

Manufacturer's Service Managers Club To Meet In Sidney April 15

ST. LOUIS — At their next meeting, on April 15, members of the Manufacturer's Service Manager Club of the Refrigeration Service Engineers Society will be guests of Copeland Refrigeration Corp. in Sidney, Ohio, it was announced here.

In the morning, club members will go on a plant tour. After lunch, a panel of Copeland personnel will answer questions.

Next, E. T. Neubaurer, vice president in charge of engineering, will discuss "Refrigeration In the Future," and Ben Moreland, manager of manufacturing, will tell what service people in the field can do to help manufacturers increase the life of refrigeration equipment.

W. F. Armstrong, Former Industry Executive, Dies

DETROIT—W. F. Armstrong, retired General Motors vice president who held executive positions with major refrigeration manufacturers, is dead. He was 70.

With Frigidaire from 1932 to 1937, he became assistant general manager. He left to join Nash-Kelvinator as vice president, a post he held for six years. He rejoined General Motors and became vice president in charge of manufacturing, and then vice president in charge of the Chevrolet division, before retiring because of ill health.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Don't waste time cleaning Ice Machines...

USE CALGON® ICE MACHINE TREATMENT

A slowly soluble phosphate specially designed to inhibit scale in ice machines. Get it from your Refrigeration Wholesaler today.

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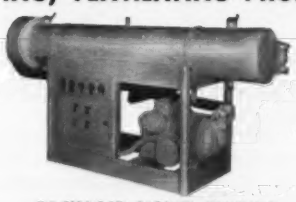
Kennard Multi-Zone Units assure consistent performance in all zones of a system!

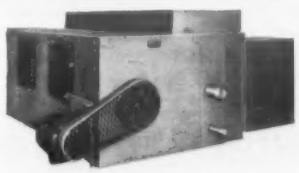
KENNARD

OTHER AIR CONDITIONING, HEATING, VENTILATING PRODUCTS



PACKAGED LIQUID CHILLERS

Kennard's shell-and-coil chiller puts this Packaged Liquid Chiller in a class by itself in the 20 HP-150 HP range. Exclusive internally-finned tubing, built as an integral part of each tube, overcomes costly heat transfer problems on the refrigerant side.



AIR HANDLING UNITS

The Kennard line includes 14 sizes of horizontal and vertical air conditioning units with CFM ranging from 400-36,000. Heating and ventilating units with 400-36,000 CFM capacities for steam or hot water systems.

COOLING-HEATING COILS

Controlled Kennard quality is featured in a complete line of cooling and heating coils including direct expansion, chilled water, steam (non-freeze and standard), and hot water.

The Kennard line also includes cooling towers, evaporative condensers, sprayed and finned coils for heating and cooling service.

Are the air conditioning units you last specified meeting design conditions *consistently?*

Kennard Multi-Zone air conditioning units are designed to meet load conditions accurately, in every zone in your system. Opposed-acting zone control dampers automatically control climate conditions in each zone.

Kennard design provides for use of direct expansion, chilled water, steam or hot water coils. Two coils—one for cooling and one for heating—which operate in parallel, are installed in each unit to supply accurately conditioned air during any season of the year. Exclusive Penta-Post frames (5 brake members) and strong sectionalized construction assure maximum year-round performance.

For more complete information see your Kennard representative or write: Engineered Air Systems Division, American Air Filter Co., Inc., 109 Central Ave., Louisville, Kentucky.

AAF American Air Filter
BETTER AIR IS OUR BUSINESS

Kennard is a famous brand among AAF products

Manufacturers To Perform More Functions of Retailer In Next 5 Years, Says Quayle of Norge

CHICAGO—In the next five years manufacturers will carry out more and more ordinary retailing functions, a Norge executive said recently.

This will eliminate such problems as too heavy inventories at dealer, distributor, and factory level, stated Robert H. Quayle, Jr., executive vice president of the Norge Div. of Borg-Warner Corp. He spoke before a meeting of the Chicago chapter of the American Marketing Association.

"Planning together will eliminate the economic waste that comes from too broad a selection; phony obsolescence that is created to sell salesmen, not customers; displays and mats never used; sales training programs thrown in the wastebasket; and all the problems that come from suspicion of the motives of the other," Quayle declared.

In discussing future retailing changes, he said the first area that bears scrutiny is integration of manufacturing and retailing, a problem which requires a complete marketing plan by the manufacturer.

"No longer can the manufacturer say it is sold when it passes from the factory to distributors, or even from distributor to dealer. It is sold only when it is delivered to a customer and it performs the service for which it was intended, satisfactorily," Quayle asserted.

The important growth of credit selling is one of the basic changes that have evolved in the retail business, he noted.

"Where previously the business was dominated by merchants, now financial people have a strong voice in the management. It is now rather more common than uncommon to have a retail store have more money in accounts receivable than in inventory," he said.

He pointed out that the J. L. Hudson, Detroit store reports that 62½% of its business is done on credit and it is estimated that roughly 50% of the Sears, Roebuck volume is accounted for by instalment buying.

"Montgomery Ward, with no appreciable change in sales, has had its receivables grow about $20,000,000 per year for the last three or four years," Quayle said.

The change in the personality of the retail customer resulting in a better informed customer will force the retailer to change his method of black and white advertising, he predicted.

"The philosophy of 'bait and switch' advertising prevalent today which says, 'only advertise what you won't sell,' must be under a strict review by all retailers. There is ample evidence that this type of advertising is not only misleading but also plain bad business.

"Ridiculously low price ads just don't produce traffic. Customers want features that will produce customer benefits. Ads will have to feature these benefits, and customers who respond to the ad will expect the ad to tell the whole truth."

Other points made by Quayle:

- The key factor in the population explosion will be the jump of the 24 and younger age group from 45% of the total market today to 47% in 1965.
- There will be greater decentralization of manufacturing. Freight expense has doubled since 1953 in terms of Norge percentage of gross profit, he disclosed.
- Stores have developed breakeven points as low as 12 to 14%.

U.L. & A.S.M.E. WATER-COOLED CONDENSERS ½ TON TO 15 TONS and LIQUID RECEIVERS for EVERY REQUIREMENT

Write for our NEW Catalog

STANDARD REFRIGERATION CO.
6034 W. North Ave.
Chicago 39, Illinois

Harris Refrigeration Names Rolland Jamison As Sales Manager

CAMBRIDGE, Mass. — Appointment of Rolland S. Jamison as sales manager of Harris Refrigeration Co. here has been announced by Charles C. E. Harris, president.

R. S. Jamison

For two years Jamison, based in Cincinnati, has been administering a national marketing program for Harris low temperature refrigeration equipment for environmental testing, industrial processing, and storage.

Davis Is Bryant Manager of Gas Air Conditioning

INDIANAPOLIS — David W. Hoppock, vice president and general sales manager of Bryant Mfg. Co., has announced the appointment of Keith T. Davis as manager of gas air conditioning.

K. T. Davis

Earl T. Richards, Jr. has been named assistant manager of gas air conditioning.

Also announced was the appointment of Walter R. Leander as product manager for gas furnaces.

Davis comes to Bryant from Syracuse, N. Y. where he was assistant to the senior vice president of Carrier Corp. Bryant is a division of Carrier. Davis will plan and direct the marketing of the new gas air conditioning unit which is being manufactured in Bryant's Indianapolis plant.

Richards joined Bryant in 1954 as director of quality control. Leander comes to Bryant after 12 years in the heating and air conditioning field, the last 10 years of which were in sales management positions with Stewart-Warner Corp.

Stewart-Warner Nets $5,144,307 In '58

CHICAGO — Stewart-Warner Corp. reported, for the year 1958, net income of $5,144,307, equal to $3.19 per share of stock outstanding, on net sales of $91,412,303.

Sales in 1957 were $111,968,574 and net income was $5,985,157, equal to $3.70 per share after adjustment for the 1958 stock dividend.

Despite reduced sales volume, net income in 1958 was the fourth highest during the past 29 years, exceeded only in the record years 1955, 1956, and 1957, stockholders were advised in a letter contained in the annual report.

Among other things, the letter noted: "All of our domestic and Canadian operating divisions experienced sales declines, with the exception of our Stewart-Warner Heating & Air Conditioning Div., which achieved a slightly higher volume in 1958 than in 1957."

How does a nylon lower stem improve a line valve?

- easy seating
- positive seal
- reduces size of valve
- wide temperature range
- non-perforated diaphragms
- never softens

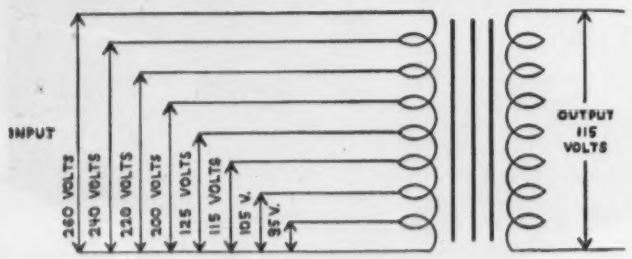
these advantages are yours *plus* all the design features of metal-to-metal seal in the packless construction. You should be using Tuffy line valves—save installation time—lower costs.

Write today for more "TUFFY" valve information

Superior

Superior valve & fittings co.
pittsburgh 26, pa.

WHAT YOU SHOULD KNOW ABOUT
TAPPED WINDING TRANSFORMERS



- Tapped winding transformers, solve both sales and installation problems, inexpensively. For example; where an air conditioner, refrigerator, or other appliance, powered by a 115 volt motor is to be installed in a location where only 230 volt power circuit is available, a tapped winding transformer plugs into the power circuit and supplies 115 volt service to the appliance.

Or, as another example; where the appliance installation is made in a location where supply voltage is *below* the normal required for good motor performance (105 volts or lower) then the input line connected to the proper taps can improve the low voltage condition and provide 115 volt service.

As shown in the diagram this transformer is designed with taps for 260/240/220/200/125/115/105/95 volts primary connection and when connected to the proper primary taps will provide a 115 volt source of supply.

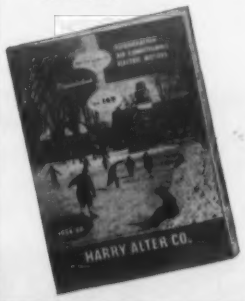
Available in ratings of 350, 550 and 750 VA. Other models provide 230 volt output from 208 volt available circuits. Write for Bulletin TW-320.

ACME ELECTRIC CORPORATION
924 WATER STREET CUBA, NEW YORK

Acme ACME Electric
TRANSFORMERS

OVER A HUNDRED EAGER BEAVERS

Yes, and everyone is ready, willing and able to serve you right. For nearly three decades, we have been key suppliers to the trade. 24 of our key people have a total of 504 years experience in this business. Why not take advantage of their very snappy service.



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REFRIGERATION • AIR CONDITIONING • ELECTRIC MOTORS

SUPPLIES and PARTS

SAVE MONEY, time and effort by ordering from our new *Dependabook*, the most complete catalog of all. 160 pages. Over 10,000 items carried in stock. *Wholesale only.* Your orders filled really fast by mail, or picked up at one of six big warehouses.

Write on your letterhead for the 1959 DEPENDABOOK . . .
Also our monthly Flyer of surplus and close-out Bargains.

The HARRY ALTER CO., Inc. Chicago 16, Ill. New York 13, N. Y. Dallas 2, Tex. Atlanta 13, Ga.
1712 S. Wabash Ave. 124 Lafayette St. 122 Parkhouse St. 690 Stewart Ave., S.W.
FREE PARKING AND FAST COUNTER SERVICE AT THESE 4 BIG WAREHOUSES

Court Rules on Air Conditioner Tax--

(Concluded from Page 1, Col. 5)

must prevail. Said the court on this point:

"The quoted sections of the 1939 and 1954 codes imposed a 10% tax on self-contained air conditioning units of the household-type. What is meant by 'the household type?' It is obvious that by his rulings the Commissioner has attempted to construe the Act in this regard. Inasmuch as the meaning of the statute must be ascertained, its construction is a legal function.

"As the Commissioner has undertaken to construe the language of the Act, we can examine his construction and determine its validity or invalidity. *Miller v. Burger,* 161 F.2d 992,994. As was said in *Woods v. Benson Hotel Corp.,* 177 F.2d 543,546:

"' * * * But it must be readily conceded that the construction of and interpretation of a statute as applied to justiciable controversies is a judicial function; and when administrative interpretation and judicial construction conflict, the latter must prevail. *Woods v. Petchell,* 8 Cir., 175 F.2d 202,206.'

Court Ruling Controls

"In 82 C.J.S. 770, it is stated:

"' * * * rules and regulations which are merely executive or administrative views as to the meaning and construction of the statute are not controlling on the courts, and cannot alter or extend the plain meaning of a statute, although they are entitled to great weight where the statute is ambiguous.'

"It is the duty of a court, where the language of a statute is susceptible of a construction which preserves the usefulness of a section, to give expression to the intendment of the law. *Armstrong Co. v. Nu-Enamel Corp.,* 305 U.S. 315, 333."

What IRS Rules Said

The interpretation to which the court has reference, and under which the tax has been applied, is that made by the Commissioner of Internal Revenue in 1954, which superseded a previous ruling made in 1948, which interpreted the tax as originally written into the Internal Revenue Code in 1939. Following is the text of the 1954 ruling:

"Section 3405 (c) of the Code imposes a tax of 10 per centum on sales by the manufacturer, producer, or importer of self-contained air conditioning units.

"It is held that the type of self-contained air conditioning unit subject to tax under section 3405 (c) of the Code includes a unit, whether a factory-made encased assembly or one sold for assembly on installation, primarily designed for free delivery of air and for installation in or in front of a window or other opening which (1) contains means for moving outside air through its condenser, (2) incorporates means for cooling, dehumidifying, and circulating the air of a room or other enclosure, and (3) has a total motor horsepower of less than 1 horsepower for motor-driven compressor types, or, in the case of absorption types, a total cooling capacity of less than 10,000 B.t.u. per hour at standard American Society of Refrigerating Engineers test conditions as set forth in ASRE Circular No. 16, dated June 1940."

The Appeal Court decision reversed a ruling of the U. S. District Court, which had upheld a contention by Cory Corp. that a room air conditioner which is made, while nominally rated at ¾-hp. (and thus subject to the tax) had a total horsepower output of more than 1 hp., and thus was not subject to the tax.

The District Court, finding for Cory Corp., stated in its conclusions of law:

"Under the revenue rulings, an air conditioning unit of the motor-driven compressor type is not subject to Federal excise tax if the actual horsepower output of its compressor motor at standard ASRE test conditions is 1 hp. or more."

Norair Takes Post On Joint Board

WASHINGTON, D. C. — Henry Norair of Norair Engineering Corp. here has been named an alternate member of the National Joint Board for Settlement of Jurisdictional Disputes in the Construction Industry.

Norair will represent the National Association of Plumbing Contractors, and also the Mechanical Contractors Association of America.

He will become a regular member of the board on May 1, succeeding Frank Lawton of Paterson, N. J., who has been representing mechanical and plumbing contractors on the board for the past several years.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

Industry in Confusion Over Tax Move--

(Concluded from Page 1, Col. 3)

—March 20—the IRS official said that "this must be considered as a possibility."

The Air Conditioner Sections of the Air-Conditioning & Refrigeration Institute (ARI) and National Electrical Manufacturers Association (NEMA) are arranging meetings with the Internal Revenue Service in Washington to try to straighten out the situation. But no one has any idea as to how long it may take for a workable definition to be developed.

Fedders Not Shipping

Fedders shut off shipments with a telegram to distributors which said that "effective with the transmission of this wire no further shipments of room air conditioners will be made until Fedders clarifies and determines its liability in reference to the excise tax."

It was reported that Fedders had given some thought to imposing the tax on all room air conditioners immediately, and then rebating if a later ruling was issued which would have exempted certain units from the tax.

However, the propriety of such a move without official word from the Internal Revenue Service was questioned, and it was then decided to stop shipments.

Long Delay Possible

One observer very close to the situation, had this to say about it:

"It might take days or weeks to straighten out the problems involved.

"The court's decision has some very broad implications on the whole area of Internal Revenue Service rulings, and could conceivably affect those rulings which define a 'household refrigerator' or 'household food freezer.'

"The decision might reach up and affect self-contained central residential air conditioners. But think of all the variations in such systems, and the problems of definitions. Besides, no adequate definitions are now in stock for what is meant by 'household' or 'self-contained.'

"I feel rather certain that the court's action will knock out any new IRS ruling, which has been under consideration since last September, and which would have changed the 1954 ruling.

New Statute Needed

"What is really needed is a new statute—and this must be done by Congress. There are some bills which have been introduced which would reduce the tax to 5%, but they offer nothing to solve the problem of defining the units to be taxed.

"It will take months to get a law through Congress, and what will happen until then is impossible to predict at this time."

Peslar Heads York Plant Operations

YORK, Pa. — H. M. Haase, president of York Div. of Borg-Warner Corp., announced the appointment of Emil Peslar as vice president of operations with responsibility over both the Decatur and Grantley Works.

Peslar has been vice president and general manager of only the Grantley Works.

At the same time, Haase reported the retirement of S. S. Meadows as vice president and general manager of the Decatur Works. Although leaving active York management, Meadows will continue in an advisory capacity to Borg-Warner.

Peslar joined York Oct. 1, 1958, after having been vice president and plant manager of the Marvel-Schelber Products Div. of Borg-Warner.

WANT DEPENDABLE COOLING EQUIPMENT?

Check FRICK Refrigeration FOR ALL YOUR NEEDS

- CONDENSERS
- PIPE COILS
- SHELL-ICE MAKERS
- VALVES & FITTINGS
- ICE RESERVE UNITS
- AIR HANDLING UNITS
- SHELL & TUBE COOLERS
- "ECLIPSE" COMPRESSORS
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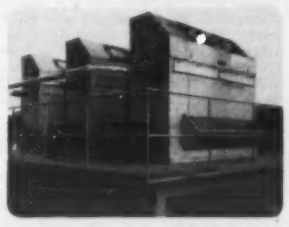

Frick Evaporative Condensers Save Up to 95% of the Water Used.

Frick compressors handle any load with any refrigerant, at any temperature.

Frick Shell-Ice—Clear Solid Pieces of Curved Ice. Made Automatically, Without Snow or Waste.

Whatever your refrigeration requirements — quick freezing, ice making, cold storage, humidity control, low temperatures, condensing, air conditioning, or any process cooling — Frick equipment is the ultimate answer . . . and Frick engineers will design a system to meet your exact needs.

Frick equipment is world renowned for a long trouble-free life of dependable operation. Many Frick compressors have been in operation over 40 years.

Some franchises still available for desirable territories.

Write . . . Wire . . . Phone Today to . . .

FRICK CO. WAYNESBORO, PENNA., U.S.A.

You can't wrap the system in cellophane . . .

PROTECT IT WITH BANOX®

Forms a molecular film on all metal surfaces contacted by recirculating water. Condenser, pump and water lines are protected against corrosion. Use at Spring start-up — after acid cleaning—at shut down. Get Banox from your Refrigeration Wholesaler today.

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DIVISION OF HAGAN CHEMICALS & CONTROLS, INC.
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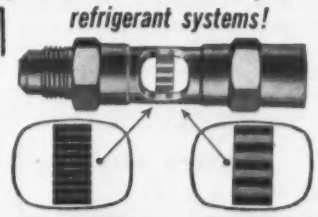
Simplest, most economical way to detect moisture in your refrigerant systems!

Positive Sealing LIQUID EYE® INDICATOR featuring the built-in MOISTURE-REACTOR



IT'S GOOD

The MOISTURE-REACTOR is composed of alternate, permanent and changing (Reactor) color bars. When all the bars appear the same color (green)—it's good—there's no moisture in system.

IT'S BAD

If moisture enters the system, every other color bar changes from green to yellow—then it's bad—the dehydrator should be replaced. When the system is moisture-free again, the Reactor color bars will change back to their original solid green color.

No more guesswork about the condition of your F-12 and F-22 refrigerant systems. No installation problems either.

Now you can get both in the same unit ...LOWEST COST MOISTURE REACTOR PROTECTION PLUS ALL THE PROVED LIQUID EYE FEATURES!

CONTACT YOUR WHOLESALER TODAY

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OVER 1,000,000 LIQUID EYES SOLD TO DATE!

Heating & Cooling with Water

Results of Research over Past 18 Years Summarized In U. of Illinois Report

A cooperative research program in steam and water heating and summer cooling has been carried on at the University of Illinois since 1940. This program has been carried out under the terms of a cooperative contract between the Institute of Boiler & Radiator Manufacturers and the University of Illinois Engineering Experiment Station.

A summary outline of some of the results of the research has been compiled by W. S. Harris, M. D. Eide, and R. D. Barkman of the University of Illinois. Since this concise and informative material may prove useful to those involved in installations of this type of equipment, the summary is being published in a series of instalments in the NEWS. This is Part 6. Parts one, two, three, four, and five appeared in the Oct. 6, Oct. 27, Dec. 1, Feb. 9, and Feb. 23 issues, respectively.

(6) Snow Melting

1. Objects:

a. Determination of snow melting load per square foot of area melted.

b. Determination of the relationship between the maximum snow melting load, design house heating load, and the boiler capacity.

c. A study of the control of a domestic snow melting system.

d. Study heat flow up and down from a variety of coil designs, and methods of insulating underside of slab.

2. Results:

a. The system was able to melt snow at a rate of 1¼ in. per hour with an average fluid temperature of about 100° F.

b. The average operating period of the system was about 1¼ hours, and it was found that even in zero weather the boiler was able to handle the snow melting and the house heating system loads with a decrease in the average house temperature.

c. The gross output of the boiler was approximately equal to the combined snow melting and house heating loads.

d. Total seasonal cost of fuel for snow melting system of about 320 sq. ft. melting area was about $18 when operation was controlled by a thermostat set at 35° F. and located just below the walk surface.

e. The effects of coil spacing, depth of bury, and insulation under the slab on the steady-state performance of snow melting systems have been studied by means of an electrical analog. These studies have indicated that, except for water temperature, the steady-state performance of a system using coils consisting of ¾-in. pipe on 12-in. centers and a depth of bury of 2 in. was essentially the same as for a system consisting of nominal ½-in. tube on 6-in. centers and a depth of bury of ½ in.

f. These studies have indicated that for given outdoor conditions the heat requirement to maintain the snow melting panel at a minimum temperature of 32° F. is the same for a panel consisting of coils on 12-in. centers and a 2-in. depth of bury as for a panel consisting of coils on 6-in. centers and a ½-in. depth of bury. However, the required fluid temperature will be lower in the latter system. A system consisting of coils on 12-in. centers and a depth of bury of ½ in. will require a heat input rate approximately 20% higher than for the panels just described.

g. Insulation under the snow melting panel has very little effect on the steady-state operation of snow melting systems.

h. If rapid warm up is of paramount importance, the coil spacing of 6 in. is preferable to the 12-in. spacing. Depth of bury is not as critical, but a 2-in. bury results in a slightly more rapid rate of temperature rise midway between the coils than do shallower depths of bury.

i. For a given water temperature, the required heat input rate for a 6-in. spacing is approximately twice that required for 12-in. spacing; however, the 6-in. spacing requires a lower water temperature to maintain the minimum panel surface temperature above freezing.

j. If the system is to be thermostatically controlled so that rapid warm up is not of paramount importance, it was found that a coil spacing of 12 in. and a depth of bury of 2 in. results in the lowest heat input rate and a fairly uniform panel surface temperature.

k. The use of insulation on the underside of the slab has very little effect on either the rate of heating the slab or on the cost of operation.

l. For any given panel construction, increasing the coil size increases the required heat input rate and the rate of heating the slab.

(To Be Continued)

House In Milwaukee Home Show To Have Hot Water System

MILWAUKEE — Hot water heating will be featured in the "Wisconsin House" to be erected in the Arena here as part of the annual home show in April, it was announced.

The system will be installed as a special promotion by the Milwaukee Heating, Piping & Air Conditioning Contractors' Association.

House itself, which is designed to meet a $20,000 ceiling, will be erected by Mid-Towne Home Builders, Inc., under the sponsorship of the *Milwaukee Journal*.

Heating system will employ a gas-fired boiler with finned baseboard radiation, and will probably cost some $250 more than a forced warm air system, according to Walter Oleson, executive vice president of the association.

Although summer cooling will not be provided in the house, it could be added by means of an attic type conditioner costing about $1,200, according to Oleson.

If installed during initial construction, a hot and cold water hydronic system would cost one-third less, he claims.

In School Heating

Doing Your Own Transforming Is Important

UTICA, Mich. — Doing your own transforming is an important factor in making electrically heated schools practicable when utility rates might otherwise be prohibitive.

This was brought out during a meeting at one of two all electric schools here recently. School officials, architects, contractors, and engineers were among the attendees who heard the several people involved discuss their roles in deciding upon and installing the all electric system, which includes unit ventilators and baseboard heaters.

By installing its own bank of transformers in each of the two schools, the Utica school system pays the lower "primary" rate for power; the power is metered at the high-voltage side, before the school steps the voltage down to usable levels. In this case the primary rate is 1.5 cents per kwh.

With only a few months of operation behind the schools, school superintendent Fred Atkinson felt that cost figures would be insignificant at this point, although he did say "We are running 10-15% lower than we estimated—and this in the face of an unusually severe winter."

Pertinent figures will be gathered over the next several years, he added, but there is no doubt that the decision to go all electric will be justified.

Embassy Will Offer Electric Baseboard

HADDONFIELD, N. J.—Embassy Steel Products, Inc. will now manufacture an electric baseboard, it was announced by Irwin Nelson, vice president, national sales, at the company's annual national sales meeting held recently at the Cherry Hill Inn here.

Nelson stated there is a great deal of interest in the heating industry in electric baseboard radiation. He predicted that by 1960 more than 1,000,000 homes will be heated electrically.

The Embassy executive estimated that only 7% of electric baseboard is distributed through heating wholesalers and contractors. The balance is distributed through electrical wholesalers, he said. While the total market is presently small, it is growing rapidly and heating wholesalers would be wise to look into the sales potential in their areas, Nelson added.

Embassy is preparing an informational program for its distributors to help them benefit from any demands in their territories, he said.

Elliot S. Nelson, president of Embassy, discussed the sales progress of the company. He stated that despite the recession 1958 sales were the highest in the company's history. This was due in part, he said, to the introduction of new products, and also to "the thorough sales indoctrination of Embassy representatives and customers."

CLASSIFIED ADVERTISING

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POSITIONS AVAILABLE

PRODUCTS SPECIALISTS needed by leading air conditioning manufacturer. Expanding position covering all areas related to product development, application and salability in liaison between sales and other company divisions on packaged liquid chillers, packaged air conditioners and air handlers. Excellent opportunity with growing company. Address replies with complete summary of personal history and work experience to Mr. John P. Campbell, ACME INDUSTRIES, INC., 600 N. Mechanic Street, Jackson, Michigan.

SALES ENGINEERS—Applications are now being solicited from young qualified sales engineers interested in or having experience in air conditioning sales work. We are planning to expand our sales program throughout the United States, this resulting in a number of openings for new personnel. Send resume showing personal information, education, experience, and general salary level expected. Replies will be held confidential. Write: Employment Manager, ARKLA AIR CONDITIONING CORP., Evansville 7, Ind.

WANTED—MANUFACTURING representative to sell ammonia valves in New York. Sales representative should be handling compatible ammonia refrigeration products. CYRUS SHANK CO., 4646 West 12th Place, Chicago 50, Illinois.

ENGINEER REFRIGERATION Controls—To head a department on design and development of commercial refrigeration control valves of all types; national corporation with midwestern manufacturing and engineering facility; salary and bonus commensurate with work background and ability. Send full details, qualifications and personal data, to BOX A6172, Air Conditioning, Heating & Refrigeration News.

PROPELLER DESIGN engineer—Midwest manufacturer established over 50 years. Must have broad experience in this specific field. Capable of solving customer problems and presenting new concepts in axial flow air moving equipment to the trade. Include in reply complete resume and salary expected. BOX A6233, Air Conditioning, Heating & Refrigeration News.

APPLICATION AND sales engineer, technical graduate or equivalent wanted with refrigeration experience and sales. Age 25 - 32. Interesting work calling on contractors, wholesalers and air conditioning and refrigeration manufacturers in established territories for nationally known control manufacturer. Starting salary based on experience plus commission after indoctrination. All replies will be kept confidential. Address reply to BOX A6207, Air Conditioning, Heating & Refrigeration News.

MANUFACTURER'S REPRESENTATIVE for commercial refrigerator manufacturer. Several desirable territories open. Activities to include contacting distributors, dealers and food chains. Give details as to experience, territories in which you can give complete coverage, and industry references. Replies held in confidence until interview. BOX A6237, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT WANTED

WANTED—WATER cooler and window A. C. parts and service franchise. Now operating heating and air conditioning service. Investigation welcome. Write DART HEATING AND A. C., 17833 Strasburg, Detroit 5, Mich.

EQUIPMENT FOR SALE

RESIDENTIAL & COMMERCIAL air conditioners—air cooled 1 ph.—230V. 2 hp. highside with horiz. evap. $357.00; 3 hp.—$489.00; 4 hp.—$684.00; 5 hp.—$761.00. 2 hp. self contained horiz. units $306.00; 3 hp.—$504.00; 4 hp.—$599.00. Additional 5% discount for quantities of 5 units one order to one destination. ARCTICAIRE MFG. CO., 2201 Grand—K. C., Mo., Telephone BA 1-7055.

300 DOLLAR reward, for information leading to the sale of one of these 3 items: 500 ton Carrier, Freon, complete condensing unit, centrifugal steam turbine drive and liquid chiller—$30,000.00. York 4 cylinder compressor 14" x 13½"—$13,500.00. Twin Vilters, 10½" x 10½" compressors with synchronous drive and controls—$13,500.00. Many other used industrial refrigeration components, motors and controls. DRAKE ELECTRIC AND REFRIGERATION, 405 South Eighth St., Marshall, Illinois.

SOMBREROS? NO. Now good thermostatic expansion valves made in Mexico. Half ton $8.75, ¾ and one ton $9.90. Agate needle for long life. Secret charge of all temperatures, no adjustment in the field needed. Very compact. Try this valve for utmost performance and satisfaction. Order from FRIGOTHERM MECANICA AGENTS, 2018 Zaragoza St., Laredo, Texas.

NEW PACKAGED water chillers — Prewired control panel with high-low, operating, freeze, and circulator relay controls. 230 volt, 60 cycle, 1 or 3 phase current. 1¾ hp. water cooled $162.00; 3 hp. water cooled $417.00; 2 hp. air cooled $246.00; 3 hp. air cooled $617.00; terms-cash, F.O.B. manufacturer. BOX A6234, Air Conditioning, Heating & Refrigeration News.

BUSINESS OPPORTUNITIES

MEDIUM SIZE refrigeration, heating and air conditioning sales and service. Doing business under two well known commercial and two domestic franchises. In southern part of Michigan. Reason for selling, ill health. BOX A6235, Air Conditioning, Heating & Refrigeration News.

FOR SALE — In Florida long established, profitable, heating and air conditioning business in large fast growing market area. Will reply only to qualified investors — Price $125,000.00. BOX A6236, Air Conditioning, Heating & Refrigeration News.

MISCELLANEOUS

CONTROLS & RELAYS repaired like new. UNITED CONTROL REPAIR COMPANY, new address: 151 E. 126th Street, New York 35, New York.

ATTENTION REFRIGERATION Servicemen: Would you be interested in saving from 25 to 50% on many standard refrigeration and air conditioning parts and supplies? Send for our free circulars and catalogs. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

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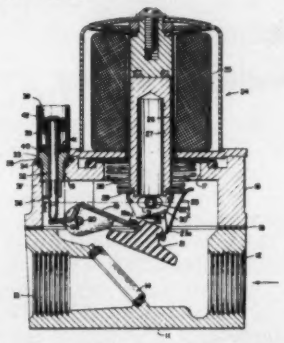
AIR CONDITIONING, HEATING & REFRIGERATION NEWS

450 W. Fort St. Detroit 26, Michigan

PATENTS

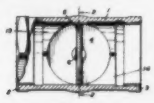
Weeks of Dec. 2 & 9 (Continued)

2,862,684. SOLENOID VALVE. Eric B. Ander, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.



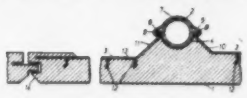
1. A control device comprising a housing, a lever pivoted in said housing, a control member carried by said lever, a solenoid mounted in said housing, a plunger in said solenoid and having a slot therein extending transversely with respect to the axis of said plunger, a pivot on said lever and extending through said slot, and a leaf spring secured to said lever and having a portion that is out of engagement with said plunger when said solenoid is de-energized and is in transversely biasing engagement with the adjacent end of said plunger when said solenoid is energized.

2,862,685. FLOW CONTROL VALVES. Kurt Hugo Folke Lundberg, Upsala, Sweden, assignor to Urquhart's (1926) Limited, London, England, a British Company.



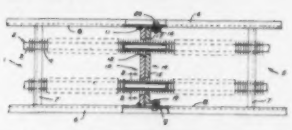
1. A flow-control valve comprising a valve body having a flow passage through it and a cylindrical chamber formed transversely across it, and a rectangular plate valve member disposed diametrically in and rockable about the axis of said chamber, the flow-obstructing portions of the cylindrical wall of said cylindrical chamber being formed with ports situated in the line of flow. . . .

2,862,692. STRUCTURAL ELEMENT FOR HEATING OR COOLING ARRANGEMENTS IN BUILDINGS. Alfred Wolf, Basel, Switzerland, assignor, by mesne assignments, to Etablissements Alustra, Vaduz, Liechtenstein.



2. A structural element for cooperation with tubular heat control means, comprising a front layer of relatively poor heat-conducting material, a sheet of heat-conducting material disposed on and for contact with said front layer, said sheet including a pair of outer substantially planar end portions and an integral, elongated channel portion intermediate said planar portions and deformed to extend rearwardly of said planar portions. . . .

2,862,693. SUPPORT FOR FINNED TUBE TYPE HEAT EXCHANGERS. Townsend Tinker, Orchard Park, N. Y., assignor, by mesne assignments, to American Radiator & Standard Sanitary Corp., New York, N. Y.

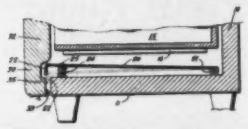


12. In a heat exchanger the combination comprising a finned tube rigidly supported at spaced points therealong to a frame member, an additional tube support member fixed to said frame member intermediate said spaced points and having an aperture therein, a clamp member positioned between said spaced points and having an aperture therein initially aligned with said first aperture, said finned tube passing through said aligned apertures. . . .

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

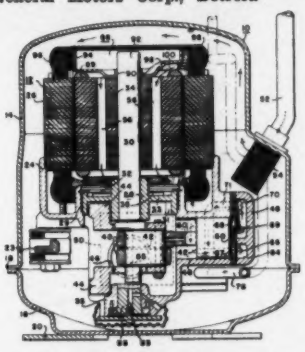
Week of Dec. 16

2,864,326. REFRIGERATOR SAFETY DEVICES. William J. Laffey, Chicago, Ill.



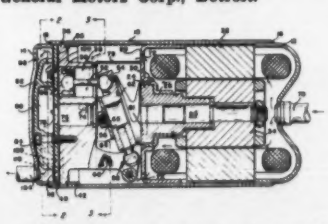
1. The combination with a refrigerator having a floor portion, and a hinged door, said floor having at least one longitudinal recess adjacent said floor portion of said refrigerator and having a substantially flush bottom portion below said recess and extending nearer said floor portion than the outer extent of said recess. . . .

2,864,550. REFRIGERATING APPARATUS. John Weibel, Jr., and Irving M. Pelsor, Dayton, Ohio, assignors to General Motors Corp., Detroit.



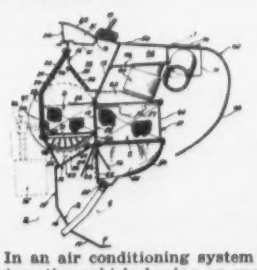
2. In a sealed motor compressor unit; a casing; a frame supported in said casing; said frame having a plurality of concentric cylindrical surfaces formed thereon; a motor including a stator positioned by one of said surfaces; said motor including a drive shaft; said drive shaft having one portion thereof in bearing engagement with another of said surfaces; a bearing insert for another portion of said drive shaft positioned by still another of said surfaces. . . .

2,864,551. REFRIGERATING APPARATUS. John H. Heidorn and Richard J. Becht, Dayton, Ohio, assignors to General Motors Corp., Detroit.



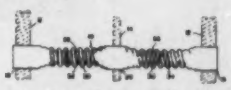
1. In a sealed motor compressor unit, a cylindrical sheet metal casing, stamped sheet metal end caps for said casing, motor compressor means disposed within said casing and including a drive shaft, a bearing for said drive shaft, stamped sheet metal bearing mounting means having an outer annular flange portion arranged in engagement with the inner wall of said cylindrical casing and having an inner flange portion arranged to encompass said bearing throughout a substantial portion of the axial length of said bearing. . . .

2,864,580. AIR CONDITIONING APPARATUS FOR AUTOMOTIVE VEHICLE. Meade F. Moore, Birmingham, Mich., assignor to American Motors Corp., Kenosha, Wis.



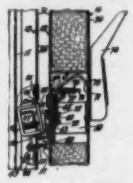
1. In an air conditioning system for an automotive vehicle having an engine compartment and a passenger compartment, an air conditioning apparatus comprising: a primary panel separating the engine compartment from the passenger compartment; a heat radiating device mounted at the panel on the engine compartment side thereof; means for activating the heating device for heating the surrounding air; a housing structure surrounding the heat radiating device. . . .

2,864,581. CORRUGATED TUBING. Russell M. Frink, Bloomfield Hills, Mich., assignor to Calumet & Hecla, Inc., Calumet, Mich.



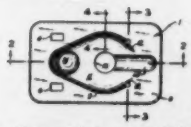
1. A heat exchange tube adapted to carry a fluid, said tube having longitudinally spaced cylindrical portions and an intermediate portion, said intermediate portion being corrugated throughout its circumference to provide the same with an undulating configuration in longitudinal section in which the undulations are smooth and free of abrupt and sharp changes in direction. . . .

2,864,637. MAGNETIC DOOR LATCH. Walter D. Teague, Annadale, N. J., and Robert H. Ensign, Bronxville, N. Y., assignors, by mesne assignments, to Whirlpool Corp.



1. A magnetic latch for use with a cabinet having a movable door, said latch comprising relatively movable magnet and armature elements having cooperating faces, the face on each of the elements being flat over its entire area, one of the elements adapted to be mounted on the cabinet and the other element adapted to be mounted on the door. . . .

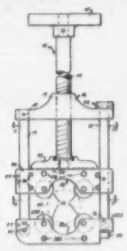
2,864,918. THERMOSTAT. Henry David Epstein, Boston, Mass., assignor to Metals & Controls Corp., Attleboro, Mass.



1. A thermostat comprising an integral bimetallic sheet, said sheet having a face including means adapted to receive a fastener and having a marginal flange adapted to stiffen said face against any substantial distortion in response to temperature, said sheet having a tongue portion relieved from said face within the flange but having an integral connecting portion therewith at one of the ends of the tongue portion, said tongue portion having a non-developable form adapted to produce snap action in response to temperature. . . .

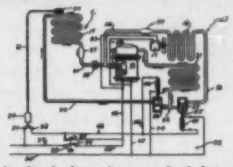
Week of Dec. 23

2,865,096. TUBING AND PIPE CUTTER. Louis Joseph and Anthony J. DiPietro, Brooklyn, N. Y.



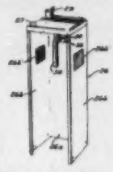
1. A cutting tool for tubular elements which includes a central supporting element, a first and second shaft attached to said element in spaced relationship, said first shaft permanently affixed and said second shaft removable, a threadably mounted operating screw with a handle affixed at one end thereof, said operating screw threaded through said central element and provided with a rotatably supported shoe at its opposite end, a pair of yokes. . . .

2,865,181. COMBINATION FREEZER AND DEHUMIDIFIER. Leland J. Anderson and Charles Ward Stoner, Milwaukee, Wis., assignors to Ben-Hur Mfg. Co., Milwaukee, Wis.



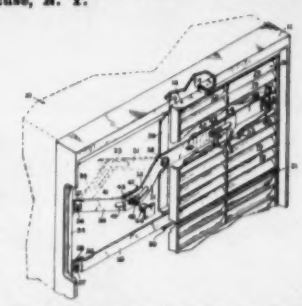
1. A dual freezing and dehumidifying arrangement adapted to be installed in a freezer cabinet comprising, a freezer cycle and a dehumidifier cycle, a compressor, a condenser communicating with one side of said compressor; said dehumidifying cycle in open communication with said condenser and including a capillary tube communicating with the condenser at one end thereof.

2,865,182. SELF-CONTAINED WATER COOLER OF THE BUBBLER TYPE. Wilfred R. Schultz, Troy, Mich., assignor to Temprite Products Corp., Birmingham, Mich.



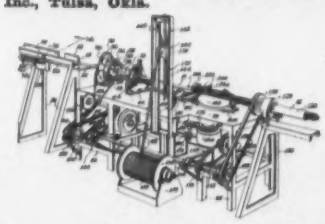
4. In a self-contained cabinet water cooler, the combination of a cabinet structure comprising a floor-supported frame having channel shaped rear posts arranged with their channel recesses facing each other and a wall structure extending across the front and two opposite sides of the frame structure; an insulation box structure with upright side walls supported in the upper part of the frame structure for holding a refrigerant-expanding cooling unit; refrigerant compressing means supported in the cabinet below the insulation box; and a refrigerant condenser. . . .

2,865,277. AIR DISTRIBUTION ASSEMBLY. Harlan L. Howe, De Witt, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



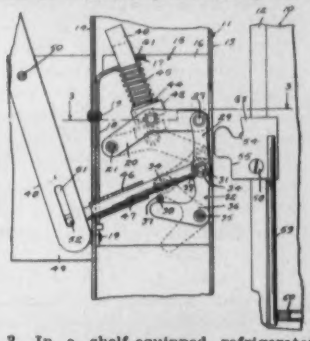
In combination with a frame adapted to be placed over an open end of an air conditioninig unit, the frame including a recessed ledge on its inner edge, a first member having an offset end secured to the ledge at opposite sides thereof, and a second member extending at an angle thereto attached to the opposite sides of the ledge and to the first member, a spring mounted louver assembly adapted to be placed within the frame, said assembly comprising a plurality of louvers. . . .

2,865,494. MACHINE FOR FORMING FINNED HEAT TRANSFER TUBES. Arthur H. McElroy, Tulsa, Okla., assignor to Coynco Products, Inc., Tulsa, Okla.



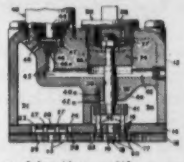
1. A device for wrapping a strip on edge spirally around the exterior of a longitudinally moving and rotating tube to provide spiral, spaced heat exchange fins exteriorly on the tube comprising drive means for longitudinally feeding and rotating a tube having one end of a strip affixed on edge to its exterior surface, means for rolling the strip as it initiates the formation of fins on the tube. . . .

2,865,313. SAFETY MECHANICAL REFRIGERATOR DOOR CLOSURE. Silas A. Morehouse, Centerville, Va.



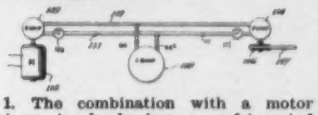
3. In a shelf-equipped refrigerator of the type having a hinged door, a safety door closure comprising a bolt mounted in said door and normally biased in a latching direction, manually operative means on said door for moving said bolt in an unlatching direction, and a keeper for said bolt on said refrigerator in contact with a shelf thereof, said keeper being adapted upon displacement of said shelf to release said bolt.

2,865,557. COMPRESSOR UNLOADER. George W. Hartwell, South Hadley, Mass., assignor to Worthington Corp., Harrison, N. J.



1. In combination with a compressor having a cylinder including a movable piston therein, a suction valve and a discharge valve for the compressor, a cylinder head for the compressor cylinder and including inlet and outlet chambers communicating respectively with the suction valve and the discharge valve. . . .

2,865,558. HYDRAULICALLY OPERATED COMPRESSORS. Otto J. Schemmel, Chicago, Ill.



1. The combination with a motor driven truck having a refrigerated body enclosure in which use is made of a compressible fluid refrigerating medium, of means to compress the refrigerating fluid medium comprising a unit including a pressure liquid operated motor and a fluid compressor in driven connection with motor. . . .

(To Be Continued)

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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Hospital Aseptic-Air System--

(Concluded from Page 1, Col. 2)

teria, including the dread Staphylococcus Aureus (staph) the anti-biotic resistant germ which is a serious hospital menace today.

"It will materially reduce cross-infection and cross-contamination from patients with tuberculosis and other air-borne diseases."

The aseptic condition is achieved by exposure of all bacteria, viruses, and fungi in the air to high-intensity radiation at a very close range.

"Irradiation takes place in a cylindrical aluminum chamber whose inner surface is highly reflective for radiation in the germicidal ultraviolet range," said a statement by hospital authorities.

"Inside this chamber is a baffle which induces turbulence and directs the air in a cyclonic pattern that insures complete exposure of all air-borne particles to the lethal rays emanating from the ultra-violet arc which extends lengthwise through the core of the chamber.

"A typical unit of one such chamber, for example, operating at an airflow of 100 c.f.m., will kill in excess of 99.9% of micro-organisms in a single passage.

"The high effectiveness of this new system is attained by insuring that no micro-organism passing through the chamber is more than 3 in. from the ultraviolet tube.

"Effectiveness of radiation in the free air is inversely proportional to the square of the distance of the target from the source of germicidal energy. Hitherto, an ultraviolet tube used in the conventional manner to disinfect areas at a distance of four feet from it, would exert only 1/256 of the germicidal effect of the tube in the Robbins aseptic-air chamber.

"Continuous recirculation of room air through the ultraviolet chamber insures constant decontamination.

"Since radiation is confined within the sealed chamber, exposure of personnel to the dangerous rays and to burns from them is eliminated and ultraviolet arcs of very high radiation intensity can be safely used.

Application of the new system includes the maintaining of positive air pressures in a predetermined manner, in non-infectious hospital areas to prevent entry of contaminated air. Negative pressures prevent the air in infectious areas from escaping and circulating through the rest of the hospital.

Plans have been made to install the system in Mt. Sinai's Clinic and Research Buildings, where positive pressures will be maintained throughout the building except in areas where contagious patients are exercised and treated.

The aseptic-air system was developed by Reginald Robbins of Los Angeles in collaboration with Prof. Gennody W. Potapenko of California Institute of Technology.

Robbins is engaged in medical research and development, specializing for the last six years in the field of micro-organisms. Dr. Potapenko, associate professor of geophysics at Cal Tech, is a well-known physicist.

Dr. David Salkin, director of professional services in the U. S. Veterans Administration hospital at San Fernando, Calif., did some of the basic research on the system's efficacy.

Robbins has patents pending on certain phases of the system design, but does not plan to manufacture it. He has asked that inquiries about the aseptic-air system be addressed to him at P. O. Box 49856, Los Angeles.

Robbins said that special credit was due several firms who gave aid during the development of the system, among them General Electric Co.; Howard-Helfman Co.; Tuttle & Bailey Pacific Co.; Ultraviolet Products, Inc.; Air Marine Motors; and the Torrington Corp.

CARRIER CORP. says its new one-piece Heat Pump Weathermaker establishes a new economy in year-round air conditioning with an installed price well under $1,000. Already in use in a 250-unit development in Arizona, its monthly operating costs for both the heating and cooling are said to average only $10. The new heat pump requires a space only 3 ft. sq. and is designed for slab or rooftop application.

Carrier 'One-Piece' Heat Pump--

(Concluded from Page 1, Col. 5)

ating costs as well.

Gray pointed out that some of the new heat pumps are already in a 250-unit development in Arizona at a cost under $900 per dwelling. On top of this, operating costs, for both heating and cooling, average only $10 per month, he said.

The 2-hp. "Heat Pump Weathermaker" can be placed on a 3-ft. square outside the house or on the roof.

"Incorporating many advantages of the company's two-piece heat pump systems for larger homes, the single unit features automatic defrosting and a current saving thermostat which actuates electric strip heaters when outdoor temperatures drop below certain levels," the announcement pointed out. "This device prevents the heaters from operating each time the indoor thermostat demands heat.

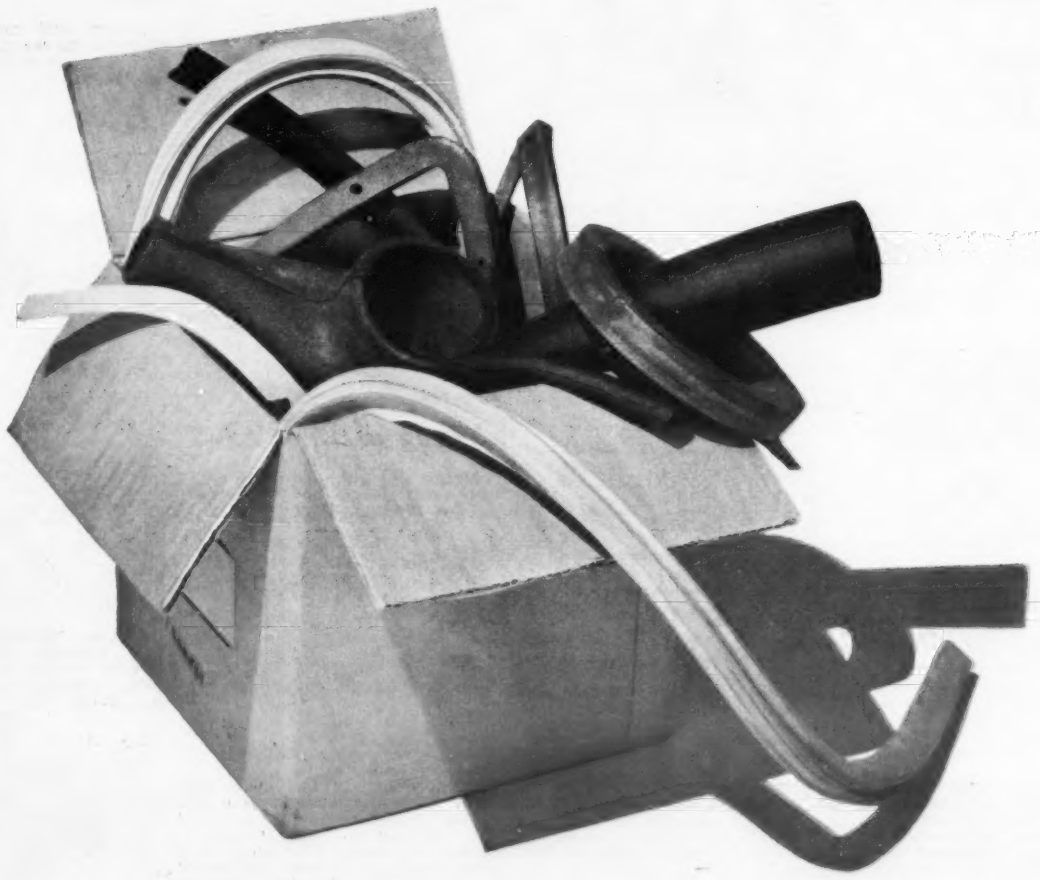
"The new heat pump has a cooling capacity of 22,000 B.t.u. and heating output of 23,000 B.t.u. with additional strip heaters available at 10,000 B.t.u. each."

Amstan Supply Div. Headed by Ruston

PITTSBURGH — C. Gilmore Ruston has been named vice president, field operations of Amstan Supply, Div. of American-Standards, according to R. F. Sells, division president.

In this newly-created position, Ruston will supervise, through regional managers, 68 Amstan branch and warehouse operations in the United States. He has been marketing manager.

B.F.Goodrich



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